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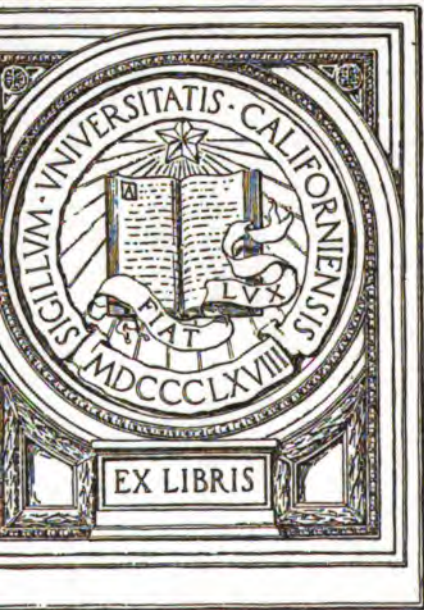
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THE
GLASGOW MEDICAL JOURNAL.

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No. I. JULY, 1901.

ORIGINAL ARTICLES.

FURUNCULOSIS OF THE EXTERNAL AUDITORY
CANAL.¹

By JAMES GALBRAITH CONNAL, M.B., F.F.P.S.G.,

Lecturer on Aural Surgery, Anderson's College Medical School ; Surgeon,
Throat and Nose Department, Glasgow Central Dispensary ;
Assistant Surgeon, Glasgow Ear Hospital.

FURUNCLE in the external auditory canal is one of the less common diseases of the ear. Taking the statistics of the Glasgow Ear Hospital for the last four years, where there were on an aggregate 5,653 cases, furuncle occurred 136 times, or about 2½ per cent of all cases of ear disease. Last year there were 41 cases, in the great majority of which the furuncle occurred as the primary and sole lesion; but in a minority (30 per cent) it was associated with other lesions, notably chronic purulent inflammation of the middle ear, less commonly ceruminous collections and eczema of the external auditory canal.

Löwenberg has stated that this disease is due to an invasion of the ceruminous or sebaceous glands of the canal by the staphylococcus aureus or albus; but probably any local abrasion of the epithelial lining of the canal affords a fitting

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 5th April, 1901.

nidus for the staphylococcus, and in the presence of a suitable constitutional condition of the patient may produce the disease. Hence it is often met with during the course of an eczema of the canal, when the itching impels the patient to scratch the part with a pin or the finger nail, and thus to give rise to an abraded surface. The same reason holds good with regard to ceruminous masses, the sense of an obstruction in the canal leading the patient to make efforts to remove it with ear-picks or pins.

There is a peculiar periodicity in the appearance of these cases, so much so that the term epidemic has been applied to them. Gruber quotes two instances of this—an epidemic in Paris in May and June, 1863, and in Vienna a little later (*Text-book, Diseases of the Ear*, p. 234). Patients with furuncle present themselves most commonly in the spring and autumn months, when one may see from ten to twelve cases in a week; on the other hand, weeks or even months may elapse and hardly a single patient present himself for treatment.

Though furuncle of the auditory meatus is one of the less common diseases of the ear, it is still worthy of some consideration when one realises that it gives rise to severe pain, much local and constitutional disturbance, and for a time occasions anxiety to the physician in attendance.

A common history of this affection occurring primarily may be illustrated by the following case:—

Christina S., 21 years of age, complains of dulness of hearing, of severe pain in the right ear with tinnitus of a "beating" character, and slight attacks of giddiness of one week's duration. She states that the illness came on suddenly, with severe pain in the right ear, which has continued since. The tinnitus is described as of a beating or hammering character. She has never had any ear affection previous to onset of present illness. On testing the hearing power, it is found that the dulness of hearing is well marked. A watch which should be heard at 40 inches is only heard at 1 inch. The left ear is normal = W.R. $\frac{1}{10}$, W.L. $\frac{1}{10}$. With tuning-forks to the right ear, bone conduction is in excess of air conduction; while with the tuning-fork applied to the forehead, the sound is referred to the affected ear (Weber's test). Examination objectively shows a furuncle on the floor of the external auditory canal, and extremely sensitive to touch with the probe. The furuncle was incised and iodoform ointment prescribed. In three or four days the patient was better—the hearing restored, the tinnitus and giddiness had disappeared.

The clinical history here given in *epitomé* illustrates the leading local symptoms of this affection, namely, pain, dulness of hearing, tinnitus, sometimes giddiness, and occasionally a slight discharge from the ear.

Pain is generally the prominent symptom, and compels the patient to seek relief. It is often described as agonising, shooting from the ear over the side of the head, and preventing



FIG. 1.

Boy, 8 years of age. Furuncle in external auditory canal. Œdema over the mastoid, displacing auricle downwards and forwards.

sleep at nights. Movements of the jaw, as in eating, generally aggravate the pain, while any movement of the auricle, or the introduction of an aural speculum into the external auditory canal for the purpose of examination, can hardly be tolerated. The pain is generally unilateral, but not always so, for rarely one meets with furuncular inflammation in both ears.

It is to be noted, however, that the nearer the furuncle is to the outlet of the canal the less severe is the pain, so that now

and again one sees cases with slight œdema over the mastoid and a furuncle near the outlet of the meatus, and yet there has been no complaint of pain. But, as a rule, pain is the prominent symptom.

The dulness of hearing in the affected ear is generally due to the mechanical obstruction in the canal, and disappears on the removal of the obstruction. Sometimes it is due to a



FIG. 2.

Boy, 11 years of age. Furuncle in external auditory canal. Œdema over the mastoid, with displacement of the auricle forwards.

coincident hyperæmia of the labyrinth, in which case the dulness of hearing may not improve after the local condition in the external canal has been remedied. A case illustrating this came under my care some years ago. A young lady, 20 years of age, had a furuncular inflammation on the posterior wall of the external auditory canal. The history was suggestive of recurrent furuncle in the same ear for about two months previous to my seeing her. She complained

of great pain in the ear, but would not allow an incision to be made. In about a week's time the furuncle discharged into the canal. She was extremely dull of hearing in the affected ear, and the tuning-fork reactions pointed to disturbance of the labyrinth. There has been no improvement in the hearing since. The objection to this theory is, that I had no opportunity of testing the hearing before she presented



FIG. 3.

Man, 26 years of age. Furuncle in the left external auditory canal. Swelling over the mastoid, displacing the auricle forwards.

herself complaining of pain in the ear. Still, when an intelligent patient speaks bitterly of dulness of hearing in an ear with which she asserts she formerly heard well, one may be assured that at all events there has been a marked aggravation of the deafness. These cases are, however, rare.

The tinnitus aurium—which in this affection is usually described as of a buzzing, beating, or hammering character—and also the giddiness, are generally mechanical in their

origin, and disappear on the removal of the cause. When subjective noises in the ear are described as beating or hammering, we refer them to some vascular derangement either in the labyrinth or middle ear, and in this affection we know that the middle ear shares in the vascular excitement of the outer canal.

In cases of primary furunculosis one sometimes meets with



FIG. 4.

Girl, 19 years of age. Furuncle in left external auditory canal. Oedematous swelling over the mastoid and squamous portions of temporal bone, and extending forwards to the eyelids.

a history of discharge from the affected ear. On enquiry, this discharge will be found to be scanty, and often ropy. It is to be distinguished from the serous discharge of an eczema, and is one exception to a general rule that purulent discharge from the ear denotes a purulent otitis media. As previously mentioned, the pus contains the staphylococcus aureus or albus. Out of a fair number of culture experiments which I have made, or which Dr. R. M. Buchanan has done for me, the

large majority of cases showed the organism to be staphylococcus aureus, a few the staphylococcus albus, and rarely a mixed growth of these organisms.

Of the constitutional symptoms, a moderate degree of febrile reaction is common. As a rare symptom, I lately met with a case of spasmodic torticollis, which I thought was due to recurrent furuncle in the external auditory canal.



FIG. 5.

Same case as Fig. 4. Shows the œdematous condition of the eyelids on the left side.

While these are the main subjective symptoms, the objective are the more important. Examination, however, must be carefully undertaken. Movements of the auricle or attempts to introduce an aural speculum may cause the most exquisite pain. Commonly, an examination can be made without introducing a speculum into the canal. Reflected light from a forehead mirror will in most cases show the characteristic swelling, and on touching this with a probe, even gently, the

patient will complain of pain. In some cases, instead of a boil, all that can be seen is a circumscribed reddish-yellow discolouration of the skin; but the characteristic is, that on touching this spot with a probe, you elicit very smart pain.

In the differential diagnosis one must remember (1) that an exostosis in the external meatus is often very sensitive to touch, but a little care will generally exclude this condition; (2) purulent middle ear mischief involving the antrum and mastoid cells may burst through the cortex of the bone, and present in the external auditory canal as (*a*) a saccular bulging on the posterior wall, or (*b*) having burst into the canal, may give rise to a sinus with small pouting granulations. Here the differential diagnosis is greatly assisted by the presence of middle ear mischief, and by the fact that these two conditions (*a* and *b*) always occur on the posterior wall of the osseous canal.

Treatment.—Locally I believe in early incision of the furuncle, and the application of an ointment which Dr. Barr recommends, and which experience has shown to be of value:—Iodoform, 4 gr.; menthol, 2 gr.; vaseline, 1 dr.; smeared on cotton plugs, and introduced into the canal of the ear twice or thrice daily. Gruber's gelatine bougies containing morphia are also of service, more especially in the earlier part of the illness, or if the patient will not allow the boil to be incised.

Ointments and instillations applied locally are numerous, but the main purpose of them all depends on their antiseptic properties. Poultices generally do harm by producing a sodden condition of the tissues, which favours microbic proliferation.

If, however, the furuncle is not a primary condition, but occurs associated with some other lesion—suppurative middle ear mischief, eczema of the canal or plugs of cerumen—these conditions would demand appropriate treatment. In furuncle associated with purulent otitis media, one is occasionally surprised to note how quickly the middle ear discharge dries up after the inflammatory condition in the outer canal has been remedied.

The constitutional treatment of this affection is of prime importance, and more especially where there is a tendency for the boils to recur in crops. In such cases the dietary must be carefully regulated—starchy and sugary foods should be withdrawn. Each individual patient should be treated according to his requirements. Tonics and aperients may be necessary. The aim in view should be a plain, wholesome,

nourishing diet, with plenty of outdoor exercise. In emphasising the necessity for supervising the dietary in this complaint, Sir Wm. Dalby (*Diseases of the Ear*) relates the case of a strong athletic young man, who for three years had never been one week quite free from a boil in either ear. In this instance the patient had been in the habit of taking a pint of beer daily. This was withdrawn and a little claret substituted, with the happiest result.

In discussing the constitutional treatment of furuncle, the tendency of bromides and iodides to produce a pustular eruption must be borne in mind. Alum and nitrate of silver applied locally are also said to favour their development.

This is the type of case commonly met with; but there is another class where, in addition to the extreme pain, dulness of hearing, and other symptoms we have already mentioned, there is marked swelling over the mastoid, which is confusing, and leads to errors in diagnosis. The error is pardonable. The severity of the pain in the ear and head, the dulness of hearing, the tinnitus, the giddiness, the constitutional disturbance, feverishness, with the presence of a scanty discharge from the ear and swelling over the mastoid, give a clinical picture which is alarming, and strongly suggestive of mastoid mischief. Apart from a local examination of the external auditory canal, it is hardly conceivable that such local and constitutional disturbance can arise from a boil in the outer ear.

To rightly understand this condition, the anatomical structure of the outer ear must be borne in mind.

Anatomical considerations.—The outer part of the external auditory canal is not a complete cartilaginous tube. Its continuity is interrupted by two or three transverse fissures—the fissures of Santorini. These transverse clefts are filled in by fibrous tissue, which is continuous with the cellular tissue over the mastoid process. Again, the upper part of the cartilaginous tube does not meet, the roof of the canal being filled in with dense fibrous tissue, which serves the function of closing this upper gap, and at the same time unites the cartilaginous part of the auricle to the bony part of the canal. This upper fibrous structure is continuous with the loose cellular tissue around the ear, in front, above and behind. Hence it will readily be understood that inflammatory, and more especially septic inflammatory conditions may spread by continuity of tissue from the external auditory canal, through the fissures of Santorini or along the fibrous band in the roof of the canal, to the cellular tissue over the mastoid, simulating closely

mastoid periostitis, and that the œdema may extend forwards, and give rise to an œdematous condition of the eyelids on the same side.

A reference to the accompanying illustrations will make this clear, and show how closely this condition arising from a furuncle in the external auditory canal may simulate graver conditions involving bone lesions, and will emphasise the fact that a correct diagnosis and prognosis can only be made after a thorough inspection of the external auditory canal.

Fig. 1.—A boy, 8 years of age, complained of deafness and great pain in right ear of eight days' duration. The pain was severe, and prevented him sleeping at night. He had always been a strong healthy boy till onset of present illness. He was seen on the 5th September for the first time (*Fig. 1* shows his condition at this date). Examination showed two furunculi—one on the floor and one on the posterior cartilaginous wall of the canal. There was marked swelling over the mastoid, displacing the auricle downwards and forwards, while the œdema involved the eyelids on the same side.

An incision was made into the furunculi in the canal. The pus showed a pure culture of staphylococcus aureus. By the 13th September (eight days later) he was quite better.

Fig. 2.—Boy, 11 years of age, with much the same clinical history. It shows pretty marked forward displacement of the auricle. Here there was a furuncle in the canal, at the junction of the floor and posterior wall. One week after incision the patient was quite well.

Fig 3.—Man, 26 years of age, complained of deafness, pain in the left ear, tinnitus, and occasional giddiness. Hearing power (watch)—right ear, $\frac{3}{8}$; left ear, $\frac{1}{8}$. Furuncle in left ear at junction of floor and posterior wall of the canal. The pus showed mixed growth of staphylococcus aureus and albus.

Figs. 4 and 5 show different aspects of the same case—a girl, 19 years of age, seen for the first time on the 22nd December, with a history of dulness of hearing, severe pain in the left ear of three weeks' duration. She was feverish, and had profuse sweatings at night. There was swelling behind the auricle, extending over the squamous portion of the temporal bone to the front of the ear, and forwards to the left eyelids, which were nearly closed. Examination showed a large furuncle at the junction of the roof and posterior wall of the canal, from which pus was liberated by incision. Bacteriologically, the pus showed a pure culture of staphylococcus aureus. In about ten days she was quite well.

In this case the inflammatory disturbance had involved the fibrous band in the roof of the canal, and from this had spread to the loose cellular tissue around the ear.

An interesting point in this case is that one month afterwards she came with a furuncle in the right ear (opposite side). An early incision, however, led to a rapid recovery.

An inspection of the photographs, and a perusal of the clinical history of these cases, will show that it is extremely difficult in some instances to differentiate between a mastoid periostitis and an cedema over the mastoid arising from a furuncular inflammation in the external auditory meatus. The difficulty in diagnosis is increased if there is, as sometimes happens, a chronic purulent otitis media. Personally, I would be inclined to emphasise the importance of a thorough but gentle examination of the external auditory meatus, when the presence of a localised sensitive furuncular swelling would, I think, settle the diagnosis.

It has been pointed out that in furunculosis the retro-auricular groove is obliterated, while in implication of the mastoid the retro-auricular groove is maintained. An examination of the photographs, however, shows that while this may be true in some cases, it is not always correct. In Fig. 1 and Fig. 3 the retro-auricular groove is clearly shown.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

By DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 338, vol. lv.)

The physical signs of diseases of the kidney have been fully described. We now come to consider the symptomatology, and will do so under the following heads:—

I. Symptoms referable to the kidney.

1. Increase in bulk of the kidney.
2. Increased sensitiveness on pressure in the renal region.
3. Spontaneous pain in the lumbar region.

II. The presence of blood, pus, or other abnormal constituents in the urine.

III. Anuria.

IV. Evidence of vicarious action of other organs

I. INCREASE IN BULK OF THE KIDNEY.

The diseases of the kidney associated with increase in bulk are movable kidney, hydronephrosis, pyonephrosis, abscess, tubercular disease, cystic degeneration, hydatids, and neoplasms. The features which characterise each of these lesions, and which make them differ from one another, may be indicated first, and afterwards the more important diseases which require to be distinguished from enlargements of renal origin will be considered.

The relationship of the kidney to its surroundings are such that any increase in the bulk of the organ must show itself in a downward or forward direction. The diaphragm and the strong lumbar muscles preclude expansion upwards or backwards. Increase in bulk of the kidney must be regarded as an important sign of disease, and one to which much care must be given; there are few organs the enlargement of which is so difficult to make out and diagnose as that of the kidney.

In order to save repetition, it may be well now to consider the general characteristics of swellings of renal origin, as distinguished from those due to morbid formations in other abdominal organs.

The colon is situated to the front and on the inner side of the enlarged kidney, unless the enlargement is extreme, so as, by dissecting the peritoneum from the anterior abdominal wall, to bring the kidney into contact with it. The small intestine is also in front of the renal swelling, and, on percussion, the renal dulness is found to be continuous with that of the spine. It must not be understood that these relationships always exist; although this is the rule, there are a few exceptions, which, however, it is not necessary to consider at present.

The renal swelling is usually rounded in all its margins, and behind its inner border is lost against the spine. When small in size it is confined to one side of the abdomen, and, although in the first instance its increase is only noticed between the ribs and the crest of the ileum, if greatly enlarged the growth may cross the middle line, and occupy a considerable part of the opposite side of the abdomen.

CASE V.—*Large hydronephrosis occupying the left side of the abdomen, and extending across the middle line below the level of the umbilicus, due to an impacted calculus.*

B. C., aged 21, was admitted to Ward 15 of the Glasgow Royal Infirmary on 27th February, 1899, complaining of a swelling on the left side of the abdomen, associated with pain. The patient first experienced pain in the left renal region three years prior to admission. It was severe in character, and while most pronounced in the lumbar region, it extended

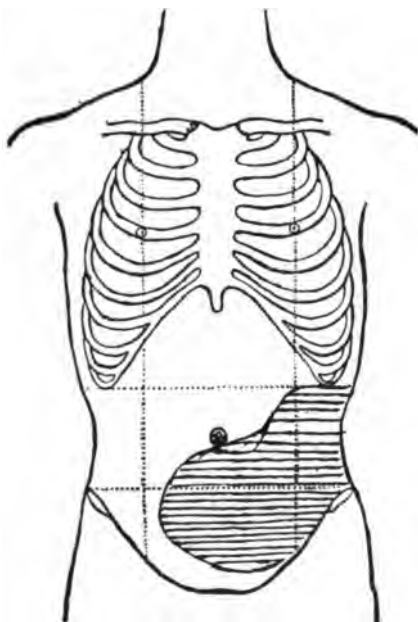


FIG. 9.

backwards, forwards, and downwards into the groin. During the first year of her illness she was engaged in a shop where she had to stand most of the day. At that time the attacks of pain occurred every few days. Their duration was very variable, sometimes lasting only for a few minutes, at other times for many hours. During the two succeeding years the attacks had been less frequent, sometimes a month intervening between them, but since December, 1898, they again became more frequent. Besides these paroxysmal attacks, she has suffered from what she describes as a constant boring pain in

the left loin. She dates the commencement of her symptoms to an accident over three years ago, when she fell through a trap-door into a cellar. The injury was so serious that she was rendered unconscious. The pain in the left loin began immediately after the accident.

She did not observe blood in the urine at any time until within the last six weeks, but during that period she has noticed that blood was present on many occasions. She could give no information as to anything abnormal in the quantity of urine. The abdominal swelling has been very pronounced during the last eight months, but during that period the bulk of the swelling has varied considerably, for a time diminishing, only again to increase. The patient's general health was good, with the exception of anæmia. On physical examination of the abdomen, a very distinct, irregular-shaped swelling was found occupying the left side of the abdominal cavity, as represented in Fig. 9, p. 13. On palpation, fluctuation could be readily made out, and a distinct wave was communicated on percussion. The whole area occupied by the swelling was non-resonant. The urine was acid; its specific gravity, 1020; it contained a distinct trace of albumen, and a small quantity of blood. There were a few pus cells in the sediment, but no tube-casts could be discovered.

An exploratory incision was made in front, the peritoneum being opened, and a large hydronephrosis was found. The kidney tissue was so completely destroyed that nephrectomy was performed, when the hydronephrosis was found to be due to a calculus firmly impacted in the upper end of the ureter.

As may be supposed, the signs of displacement of neighbouring organs will slightly vary according as the disease involves one or other part of the kidney, and, also, they will depend upon whether or not adhesions have formed. Sometimes percussion fails to betray the presence of bowel in front of the swelling on account of the intestinal gas having been expelled by pressure; usually in these circumstances careful palpation or rectal insufflation succeeds in revealing the empty intestine between the renal swelling and the anterior abdominal wall.

Whether or not the enlarged kidney follows the respiratory movements depends upon the adhesions the organ has formed with surrounding parts. In some instances contraction of the diaphragm may communicate movement to the swelling during deep respiration only.

The diseases of the kidney which give rise to considerable enlargement may be classified into three divisions:—(1) Those

in which the increase in bulk is due to an augmentation of the solid tissue of the kidney, as, for example, in certain forms of movable kidney, in hypertrophy of the kidney, in some examples of tuberculous disease, and in tumours of the kidney; (2) morbid lesions where the pelvis of the kidney has become distended with fluid, or where separate collections of fluid have formed in the renal parenchyma, as, for example, in hydronephrosis and pyonephrosis, and in abscess or hydatids of the kidney; and (3) renal lesions where there is both an increase in the bulk of the solid constituents and a dilatation of the pelvic cavity or displacement of the parenchyma of the kidney by numerous small collections of fluid, for example, in tubercular disease of the kidney with pyonephrosis, and in cystic degeneration of the kidney, and hydatids.

A *movable kidney* may be increased in bulk as a consequence of obstruction to the flow from the renal vein leading to a passive hyperæmia, or torsion of the ureter may produce a transitory hydronephrosis.

In cases of passive hyperæmia of long standing the enlargement of the kidney may be very considerable, and the increase in bulk is commonly associated with hæmaturia. This condition is well illustrated in Case VI.

CASE VI.—Movable kidney enlarged as a consequence of old-standing passive hyperæmia, hæmaturia a pronounced symptom—Relieved by nephrorrhaphy.

The patient was admitted to Ward 15 of the Glasgow Royal Infirmary on 11th January, 1899. Mrs. M'C. was 54 years of age. In July and August, 1898, she was under the charge of Dr. George S. Middleton on account of hæmatemesis due to ulceration of the stomach. At that time the urine contained a distinct trace of albumen, and hyaline and epithelial tube-casts, but no blood. She was dismissed from the medical ward in August, 1898, much improved. She remained fairly well, and was able to perform her household duties until the middle of October, 1898, when she had an attack of hæmaturia, lasting for about eight days; it then gradually passed off, and the urine assumed an apparently normal appearance. She stated that she had slight pain in the left side for a year or so, and that it became severe the day before the hæmaturia was first observed. Whenever the blood was passed the pain was relieved. The blood was intimately mixed with the urine, giving it a very dark colour, resembling port wine. Clots were also passed, some of them of considerable size. The pain (she referred to

the left hypochondrium and lumbar region) extended at times across the back, but never shooting down to the front of the thigh nor into the groin. There were no symptoms pointing to any vesical disorder. At the time of the first attack of hæmaturia she noticed a "lump" in the left loin, under the ribs, and she observed that it was movable, and she stated that at times it was painful on pressure. The pain she had during the first and subsequent attacks of hæmaturia she

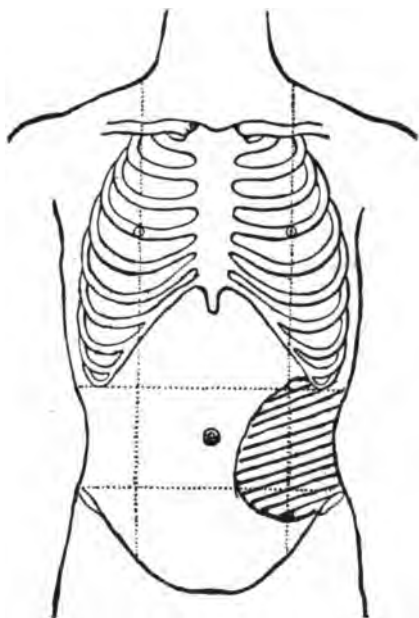


FIG. 10.

refers to the region of the "lump." The hæmaturia recurred at intervals of about a fortnight, each attack lasting for a week or so and then passing off, as on the first occasion. The patient was emaciated, anæmic, and feeble; the pulse, 80 per minute; the tongue, moist and clean. Palpation of the abdomen revealed a greatly enlarged left kidney, which was tender on palpation and distinctly movable. It occupied the whole space between the lower ribs and the crest of the ilium, and extended forward almost to the middle line (see Fig. 10, p. 16).

On admission, the urine contained a large quantity of blood.

No tube-casts present, but a considerable quantity of albumen, probably sufficiently accounted for by the amount of blood present in the urine. An examination with the cystoscope, showed that the blood was escaping from the left ureter only. The urine from the right ureter was quite clear.

An exploratory incision was made on 20th January from behind, when the kidney was found to be freely movable and greatly enlarged, the enlargement being due to old-standing passive hyperæmia as a consequence of interference with the venous return when the kidney was displaced. The kidney was sutured to the parietes, and five days after the operation the urine was sufficiently clear as only to impart a cloudy appearance due to the presence of blood, and by 29th January the blood had cleared away, leaving the urine quite clear, so that the blood could not be discovered except by the guaiacum test and by the microscope. There was a trace of albumen, and a few pus cells could be discovered in the sediment. There was a recurrence, however, on 31st January, but the bleeding was not profuse. By this time the bulk of the kidney was much reduced, and the anterior margin of the organ did not extend beyond the line of anterior superior spinous process of the ileum.

In most instances where the kidney is mobile, it is also enlarged. When the kidney becomes movable it may be mistaken for almost any form of abdominal tumour; and if associated with displacement the gland is also enlarged, the danger of an error in diagnosis is considerably increased. Mistakes arise chiefly from a belief that the affection is rare, and is seldom associated with constitutional disturbance. In many persons the inconvenience experienced from displacement of the kidney is considerable, and sometimes the affection gives rise to very decided and even grave symptoms; nervous dyspepsia with gastric crisis, marked by severe and repeated attacks of vomiting, and by fever. Great abdominal pain, simulating renal colic, may be brought on by the kidney being displaced, or attacks of hydronephrosis, renal hæmaturia, or albuminuria may be induced by torsion of the ureters and renal vessels.

On physical examination, the dislocated organ may be perceived with the hand under the margin of the ribs in the region of the umbilicus, or may even extend across the median line, and sometimes its outline may be even seen resting against the anterior abdominal wall when the patient assumes the elbow-knee position. The mass is moved with facility,

and readily returns on pressure to its normal position, and on palpation an oblong, hard, resisting mass is easily outlined. In most cases the abdomen is flaccid, and when the kidney is grasped with the hand a sickening and peculiar faintish sensation is produced. Percussion over the renal region posteriorly gives a tympanitic note, but a dull note is not got over the displaced kidney. Percussion, however, in such cases is not very reliable. The sense of resistance to the finger percussed gives more trustworthy results. On the side of the displaced kidney there is more yielding than on the normal side. When it is returned to the renal region ordinary respiration communicates movement to the kidney, which can be easily detected by the hand. Deep inspiration may throw the kidney well down, so that when the edge of the hand is placed close to the ribs the whole kidney can be grasped in the palm and prevented from retreating during the expiration following.

Palpation yields, however, the most reliable evidence, but in some cases, on account of muscular resistance, it may be found impossible to detect a movable kidney by bimanual palpation without the employment of an anæsthetic.

Hydronephrosis.—Large accumulations of urine in the pelvis of the kidney are due to mechanical obstruction to its escape either through the ureter or from the bladder. In the former the disease is generally one-sided only, whereas, in the latter, it is, as a rule, bilateral. In hydronephrosis the distended kidney presents all the physical characteristics of a renal swelling, and, in addition, fluctuation can be made out either by bimanual palpation or by a wave impulse being felt. The swelling may suddenly subside simultaneously with a sudden and copious discharge of urine of low specific gravity. This is quite characteristic of hydronephrosis.

In *pyonephrosis* the physical signs are similar to those just described, but the nature of the fluid which escapes and the constitutional symptoms accompanying the disease are sufficient to clear up the diagnosis. A kidney with a pyonephrosis is tender to the touch; as a rule, there is a history of pain in the renal region, not severe, except at intervals, but persistent; and when the pain increases it is generally associated with a diminution in the amount of pus in the urine, with fever and vomiting. There is loss of appetite, and gradual emaciation. With a free discharge of purulent urine the acute symptoms subside, there is a sudden reduction in the size of the swelling, and the patient recovers for a time.

CASE VII.—*Old-standing pyonephrosis with repeated attacks of renal colic, terminating in complete obstruction of the left ureter during last attack; no pyuria nor hæmaturia present—Nephrotomy followed by cure.*

R. H., aged 50, was admitted to the Glasgow Royal Infirmary on 21st January, 1898, complaining of pain and of a swelling in the left renal region. According to the history given by his medical adviser, Dr. P. F. Robertson, of Milngavie, the illness began twenty years ago, and was characterised throughout by attacks of severe pain in the left lumbar region. Each attack was preceded by a rigor, and accompanied by sickness, vomiting, and profuse perspiration. The pain was lacerating in character, passing sometimes down to the groin, and often was so severe as to cause the patient to lie down, and very frequently he obtained relief only by flexing the knees on the abdomen and grasping them with the arms. The duration of each attack varied from a few hours to a whole day. When the attacks passed off the urine was dark red in colour, but it was uniformly discoloured, and the red tint gradually disappeared in a day or two. At the onset of his illness the attacks occurred almost every week for six months. Following this, he then had eight years of perfect good health, and he is certain that he did not pass a stone prior to this temporary recovery. The affection, however, returned, and for the last twelve years he seldom had an interval of more than a month without a seizure. Little definite information could be procured from the patient as to the quantity of urine passed, but on questioning him he was found to believe that the pain usually subsided immediately after he passed an exceptionally large quantity of red-stained urine. He was certain that the urine always contained a brownish deposit after the attacks, and he was sure that he had never passed any gravel. He had been free from pain in the region of the bladder throughout the whole period of his illness.

On 6th January, 1898, the patient was seized with acute pain in the left side, which had persisted until now (21st January, 1898). He described it as dull in character, and felt in the left lumbar region, but occasionally it became very severe, sharp, and darting, and occasionally extended downwards to the groin. During this attack sickness and vomiting were almost constant accompaniments to the pain. He was able to take little or no food, and was greatly emaciated; since the onset of the attack the urine was dark in colour.

Palpation of the abdomen detected a very marked increased resistance in the left lumbar region (Fig. 11—B, p. 20), as

compared with that of the right side, and considerable pain was experienced when pressure was made over the affected area. The increased resistance was due partly to increased muscular tension, but with steady pressure a distinct swelling could be felt in the left lumbar region. It was rounded in form, and the margin was found, by palpation, to extend to within 3 inches of the umbilicus. The line of dull percussion, however, was more limited (see Fig. 11—A, p. 20).

Examination under chloroform revealed distinct fluctuation.

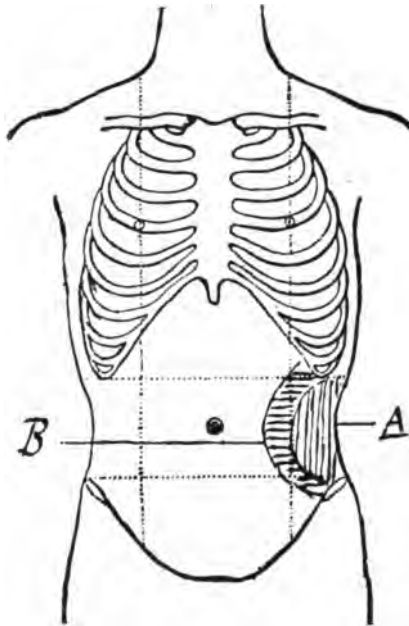


FIG. 11.

The urine was very dark in colour, acid, contained a trace of albumen, but neither blood nor sugar; no tube-casts were present, but a few crystals of oxalate of lime were seen under the microscope.

25th January.—Since admission, the quantity of urine passed was about from 30 to 50 oz. in twenty-four hours; no large quantities were passed at any one time.

The urine was dark amber in colour, and except for a few oxalate of lime crystals and a trace of albumen, nothing abnormal could be detected. The temperature ranged from

101° to 102° F. Since admission there was no change in the character of the swelling, but the patient's general condition has become steadily worse.

26th January.—The patient was placed under chloroform; the bladder was examined with the cystoscope, and found to be practically normal. A free incision was made into the left kidney, and 2 pints of foetid pus were evacuated, but no stone could be discovered.

6th February.—The patient has made good progress since the operation, and the temperature has come down to practically normal. Considerable discharge of pus and urine has been escaping through the wound, but neither pus nor blood have been detected in the urine exacuated from the bladder.

The patient was dismissed on 4th April, greatly improved, and since then he has steadily gained weight; the wound, however, continued to discharge for some months, but it was not sufficient to prevent the patient from following his occupation.

In many cases of *tuberculous disease* swelling in the renal region is not pronounced, but sometimes the kidney may attain considerable dimensions either from a tuberculous infiltration of the parenchyma of the kidney, or from a tuberculous pyonephrosis. When the increase in bulk is due to the former cause, the swelling is, as a rule, not much altered in size from time to time, whereas when it is the result of obstruction in the pelvis or ureter great variation in the bulk of the kidney may be noted. Increase in the size of the kidney generally indicates that the tuberculous lesion has advanced so as to cause obstruction to the free escape of urine. The symptoms in tuberculous pyelitis depend largely upon the presence or absence of obstruction. In cases where there is no obstruction the symptoms may be insignificant, whereas if there is any impediment in the ureter very pronounced disturbance may be produced.

The diagnosis of tuberculous disease from other renal lesions is generally easy, but in some instances it is extremely difficult. The diseases with which tuberculous lesions are most likely to be confounded are septic pyelitis, pyonephrosis, renal tumours, and the changes in the kidney consequent upon the presence of a calculus. The most important fact to ascertain is the presence of tubercle bacilli in the urine, and the existence of tubercular disease in other parts.¹

¹ Newman, "Tuberculous Diseases of the Kidney," *Lancet*, 24th February, 3rd and 10th March, 1900.

In *polycystic kidney* an increase in the bulk of the organ is the most important indication of the disease. There is a non-fluctuant swelling in one or both loins, it is rounded and more or less nodulated on the surface, is slow of growth, does not diminish or increase from time to time, nor is there sudden retention of the renal excretion. However great the increase in size, the organ retains the renal form. The absence of fluctuation at once distinguishes polycystic kidney from hydronephrosis or pyonephrosis, so also does the absence of pain, fever, and pyuria. In the early stages of the disease urinary symptoms are generally absent, but as the disease advances the excretion may contain albumen, finely granular tube-casts, or blood. The urine is usually copious in amount, pale in colour, and of low specific gravity.

CASE VIII.—*Movable cystic kidney, renal colic accompanied by hæmaturia.*

Mrs. V., aged 29, was admitted to the Glasgow Royal Infirmary on 13th October, 1898, complaining of renal pain coming on in paroxysms. These attacks were usually brought on by over exertion, the pain shooting down the thighs, but was relieved by rest in bed. The attacks were nearly always followed by hæmaturia. The patient dated the commencement of her illness nine years ago, when she began to suffer pain on the left side just under the lower ribs. The pain was first felt about a fortnight after her confinement, and at that time was very severe. With rest in bed for three weeks the pain gradually became less, but she was never quite free from it since its first onset. She stated that the pain was more severe when she was in a sitting posture than when walking about, and she further was certain that the pain always became more intense at the menstrual periods. Three years ago she had an attack of what appears to have been cystitis, and probably acute nephritis also. She had great pain after micturition, which was felt most markedly at the front of the abdomen. The urine was diminished in quantity, and for several weeks contained a considerable quantity of blood. During the past three years she had severe attacks such as have been described, each lasting for several weeks, the last attack being in May of this year. On several occasions she experienced severe pain at the end of micturition, and at these times noticed a few drops of blood passing after the urine ceased to flow.

On account of the condition of the parietes palpation was extremely difficult.

On 12th November the patient was placed under chloroform, and, on examination, a large cystic movable kidney was discovered on the left side. The right kidney was also enlarged, but to a less degree. An examination of the bladder with the cystoscope showed slight chronic cystitis, but the mucous membrane was otherwise normal. A small quantity of blood was seen escaping from the left ureter.

This case was regarded as one of cystic degeneration of the left kidney, and it was therefore not considered advisable to operate.

In *malignant neoplasms*, at an advanced stage of the disease, a palpable swelling in the loin is an almost constant sign. It is, however, always unilateral. The increase in bulk is rapid, and, as a rule, the kidney loses its strictly renal form. While in a great majority of cases of tumours of the kidney a swelling can be made out by palpation, in some instances death may ensue without the growth in the kidney being capable of detection. When the tumour has become greatly enlarged it is associated with marked distention of the superficial veins of the abdominal wall, a condition almost never observed in any other form of renal swelling. Other evidences of local pressure are generally present; cachexia is not usually very marked, so long as the disease is limited to the kidney.

The most important *diseases* which require to be distinguished from *enlargements of renal origin* are ovarian and omental tumours, enlargement of the spleen, tumours of the liver, intestinal accumulations, perityphlitic abscess, and ascites, also malignant disease of colon.

It is in connection with fluid accumulations that most difficulty has arisen. Hydatid cysts, cysts of the liver and spleen, ovarian cysts, ascites and perinephritic abscess have been mistaken for renal lesions. The history of the case, as showing the direction of growth and the relationship of the swelling to the bowel, when considered along with the accompanying symptoms, usually clears up the diagnosis.

In *ovarian cysts* both loins are resonant, the intestine being almost invariably behind the swelling. The bowel is pushed aside so that the growth is in direct contact with the anterior abdominal wall, and is frequently bound to it by adhesions. In a few exceptional cases, however, intestine has been found fixed to the anterior surface of an ovarian cyst, and, on the other hand, occasionally in very large renal accumulations,

the intestine gets behind the bulk of the fluid; consequently, the presence of bowel in front does not preclude the possibility of ovarian cyst, nor its absence that of a renal swelling. Excepting these rare cases, the position the bowel occupies in relation to the swelling is the most reliable guide in diagnosis.

In renal lesions the seat of the disease is generally indicated by some urinary complication, and in ovarian disease the diagnosis is assisted by the presence of some catamenial pain or disturbance. In renal disease, vaginal and rectal examination seldom reveal any change further than depression of the uterus, whereas in ovarian disease the uterus is raised and frequently fixed, and the tumour can be felt in the pelvis. Tumours of the ovary usually make their appearance in the lower part of the abdomen a little to one side of the middle line, but when increased in bulk they may occupy the whole of the anterior portion of the abdomen. They are, as a rule, movable, and frequently multilocular, in these respects differing from the large renal accumulations of fluid, which are fixed and unilocular.

Ascites, unless when it is limited, may be easily diagnosed from renal swelling. When general, the swelling is symmetrical, and the percussion in both flanks dull—the distribution of dullness varies with position—characters which distinguish a collection of serous fluid within the peritoneum from an accumulation of pus or urine in the kidney. Supposing, however, the ascites is limited, the signs mentioned may not be present, and there may be considerable difficulty in distinguishing, by a physical examination, the two conditions. But while in such cases the signs during life are equivocal, the concomitant symptoms will clearly indicate the nature of the disease.

Perinephritic abscess is not apt to be mistaken for organic disease of the kidney unless the two conditions co-exist. Abscess external to the kidney causes a more diffuse swelling and more lumbar bulging than do renal growths, and fluctuation is more superficial. The local surface temperature is raised, and superficial œdema is marked in the former; not so in the latter.

In *hepatic cysts* and *solid tumours of the liver*, the new formation lies in contact with the abdominal wall, very rarely is bowel interposed; consequently, the liver and the tumour dullness are continuous. These growths increase in size from above downwards, and are nearly always associated with symptoms of hepatic disturbance. Cysts arising from the

posterior margin or the concavity of the liver may be very difficult of diagnosis.

Abnormalities of the right lobe of the liver may complicate the diagnosis of a renal affection. The writer recently operated upon a case of right movable kidney, where the right lobe of the liver was elongated in a tongue-shaped process, which extended almost down to the crest of the ileum. The right kidney was freely movable, but could only be palpated through this thin mass of hepatic tissue. This led to the belief that the movable kidney was much enlarged. At the operation the kidney, while movable, was found to be little increased in bulk, and the apparent enlargement was fully explained.

Splenic growths are easily distinguished from renal by the fact that the intestine is not in front of them, and generally the sharp and well-defined edge and the notch of the spleen can be felt. The splenic growth is recognised by being movable, especially in an upward direction; by having, unless the organ is greatly enlarged, an area of clear percussion between it and the spine; by seldom causing pressure upon veins; by the other symptoms that accompany splenic enlargements—for example, leukæmia, amyloid disease, anæmia, &c.

Tumours or abscess connected with the lumbar or mesenteric lymphatic glands are sometimes very difficult to define. They are, however, usually symmetrical, are not complicated by urinary disturbance, but are associated with symptoms of intestinal disease, with glandular enlargements elsewhere, or evidence of tubercular disease in other organs.

The most common causes of enlargement of the lymphatic glands in the lumbar region is tubercle, cancer, and sarcoma. In tuberculosis the glandular enlargement usually affects both sides, and is accompanied by evidence of tuberculous disease of the spine or of one of the organs within the abdomen. The swelling is not limited to the renal region, but generally extends across the aorta, the impulses of which are communicated to the anterior abdominal wall, so as, in some respects, to simulate aneurysm.

In malignant disease the constitutional symptoms are generally so marked, and the primary lesion so prominent by the time the glands are involved, that little difficulty in diagnosis is met with.

Fæcal accumulations, fæcal and perityphlitic abscess, are not likely to be mistaken for renal swelling if the symptoms are carefully considered along with the physical signs.

The following case is of some interest as illustrating how a pyelitis of the right kidney, complicated with a large

faecal accumulation in the ascending colon, may simulate a pyonephrosis :—

CASE IX.—Swelling in right lumbar region, associated with renal colic and pyuria, resembling a pyonephrosis, but proved to be a faecal accumulation in ascending colon with pyelitis of right kidney.

Mrs. K., æt. 40 years, was seen in consultation with Dr. G. Campbell, of Partick, on 24th April, 1899. She enjoyed good health till four months prior to that time, and only four weeks ago did she become conscious of a dull pain in the right lumbar area. This pain grew rapidly worse, and in two days was so severe that the patient had to take to bed, and it was only relieved by the administration of morphia and the constant application of poultices. Since the onset of the illness, there was frequency of micturation and pyuria, but unaccompanied by pain in the bladder, and the bowels are said to have acted regularly. When seen in Partick, the patient appeared to be very ill, the symptoms and physical signs pointed to a large pyonephrosis of the right kidney, and the case seemed to demand immediate operation. The patient was therefore removed to the Glasgow Royal Infirmary. The following note is from the Ward Journal :—

“A hard swelling is obvious to palpation in the right flank, losing its upper border under the costal margin, and extending downwards to within an inch of the anterior superior spine of the ilium. Its anterior edge is bounded by a line produced from the nipple line on the right side. The swelling appears to be fixed, the surface uniform and smooth, fluctuation cannot be made out, and on pressure an inelastic feeling is conveyed to the hand. The whole of the region indicated is dull to percussion.” . . . “The urine is of acid reaction, and contains neither blood, albumen, nor pus, but, on cultivation, coli bacilli are found to be numerous.”

This was the first time in which pus was observed to be absent from the urine since the onset of the acute symptoms. Considering the inelastic character of the swelling and its great size, I was disposed to believe that, notwithstanding the history of the bowels being regularly moved during the illness, there was a large faecal mass in the ascending colon. Teaspoonful doses of castor oil were ordered to be given every hour until the bowels moved, to be followed by an enema.

“26th April, 1899.—By the administration of castor oil last night, and of enemata this morning, the bowels were freely moved, and a considerable quantity of pus escaped

from the right kidney, followed by marked relief of the pain," and during the next few days the physical signs showed that the swelling was steadily disappearing.

"*30th April.*—To-day shows the tumour to be much less definite than on the 27th inst. Now it has no precise anterior edge, but fades by degrees about the line bounding the comparative percussion dulness (Fig. 12—*B*, p. 27). There is no absolute percussion dulness, and now a clear note can

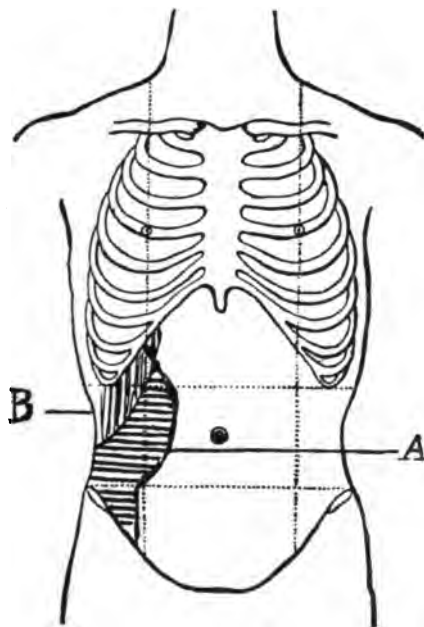


FIG. 12.

A represents the size of the swelling on 25th April, prior to admission to the Glasgow Royal Infirmary. *B* represents the swelling as observed on 30th April.

be made out through the swelling. Pain is greater to-day. The whole of the right flank is hard and resistant." The bowels were moved daily.

From the beginning of May till 14th March pus escaped in the urine, and on the latter date it is noted—"The tumour is not now palpable." The patient continued to improve, and was dismissed on 30th May in excellent health.

This case is probably an example of the kidney becoming

infected by coli bacilli from a chronically distended colon, and it was only when the pyelitis became acute that an abdominal examination was made, and the swelling in the flank discovered.

Movable kidney has been simulated by malignant disease of the splenic flexure of the colon in several cases observed by the writer.

(To be continued.)

Obituary.

JAMES ROBERTSON BUCHANAN, L.F.P.S.G.

ON the 4th of June last the grave closed over the remains of the oldest practitioner in the north-eastern district of the city of Glasgow, after a busy life of thirty-nine years amongst its sick inhabitants. Dr. Buchanan, who was a native of Deanston, Perthshire, having been born on 21st March, 1835, was brought by his parents to the city when he was only 5 years old. Receiving his education in Glasgow, he engaged for a brief period in mercantile pursuits; and he also studied pharmacy for a short time in the shop of a west-end chemist, where the notorious Dr. Pritchard, the poisoner, was a frequent caller, and of which highly plausible gentleman he had many strange reminiscences to relate.

When barely out of his teens, and by no monetary assistance but what came from his own exertions, he commenced the study of medicine in the University of Glasgow, the certificates of merit he gained in the various classes in the course of his curriculum attesting his ability and industry. He obtained the diploma of the Faculty of Physicians and Surgeons, Glasgow, in 1862, and immediately thereafter began practice in the district in which he was so long known and respected, alike by his patients and his medical brethren.

In addition to the keen interest he always took in his profession, and in his large and arduous practice, he had a wide and general culture, and possessed tastes of a decidedly literary and artistic character, which he, doubtless, inherited from his family, his brother, Peter Buchanan, being a landscape painter of some repute. From his earliest manhood he evinced a love for the fellowship of literary societies

and kindred clubs. Away back even in his college days he was a member of the A. M. C. Club, which consisted of some half dozen or more of his fellow-students, of congenial tastes to his own, who met weekly in each others' lodgings for social and mutually helpful intercourse. The friendships formed at these little select gatherings survived long after its members had finished their curriculums and been settled in life, far and near. The subject of our memoir continued to correspond with them, and a project was quite recently on foot to hold a reunion of the scattered club members this very summer, during the attractions of the International Exhibition and the University jubilee celebrations.

For the greater part of his Glasgow life the doctor was an esteemed member and office-bearer of the Free Tron Church, the pulpit of which was long and famously occupied by the preacher-poet, Dr. Walter C. Smith. He was one of the leading spirits of its literary society, and contributed numerous papers for discussion and debate.

Since the institution of the Toynbee Literary Society, in the Rottenrow, he has been one of its most enthusiastic members, holding the office of vice-president at his death.

Being an old Glasgow "callant," so to speak, his memory going back beyond the half-century of marvellous change wrought in our surroundings, he was naturally a most active and interested member of the Old Glasgow Club, which has for its object the conservation of old landmarks and buildings celebrated for their antiquity or associated with genius or renown.

But it was as a member and office-bearer of the Glasgow Eastern Medical Society, with which he had been connected since its inception, that he was best known to his medical brethren, who, one and all, esteemed him for his modesty, geniality, and practical out-spoken sagacity. It was only so recently as during the last session that he read a paper to its delighted members, afterwards published in this *Journal*, entitled "The Story of a Resurrectionist,"¹ which is not only a unique contribution to medical biography, but is notable for its pawky humour, originality, and genuine literary flavour.

It was only just the day before his startlingly sudden death in his own consulting room, from angina pectoris, that he was with the Eastern Medicals in their summer outing to Crieff, and appeared in the best of health and good spirits; and it is no more than stating the simple truth to say that the Society

¹ *Glasgow Medical Journal*, February, 1901, p. 81.

will be poorer by his death, as will also the district with which his simple, unobtrusive, and cultured personality has been so long identified.

Dr. Buchanan was predeceased by his wife some eighteen months ago, the latter, by a sad coincidence, passing away with startling suddenness also. He is survived by two daughters and a son, Dr. Peter S. Buchanan, who has been in practice with his father for some time back.

CURRENT TOPICS.

PREVENTION OF TUBERCULOSIS IN GLASGOW.—The first statutory monthly meeting of the local Association was held on Wednesday, 5th June, in the City Chambers. The Lord Provost presided. It was decided to postpone the election of a joint-treasurer and of a permanent secretary. After several members had expressed their opinions as to the practical steps which ought first to be taken by the Association, a sub-committee of eleven was appointed to consider this question, and to report to the next statutory meeting of Council.

ROYAL INFIRMARY.—The Managers have appointed Dr. James W. Allan to be one of the physicians to the wards in room of Dr. John Dougall, whose term of office expires next autumn.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The following are the office-bearers for 1901-1902:—*Hon. President*—Dr. W. J. Smyly, Dublin; *President*—Dr. Robert Jardine; *Vice-Presidents*—Dr. Samuel Sloan, Dr. J. M. Munro Kerr; *Treasurer*—Dr. John Lindsay; *Secretary*—Dr. A. W. Russell; *Reporting Secretary*—Dr. G. Balfour Marshall; *Pathologist*—Dr. John H. Teacher; *Council*—Dr. J. Coulson Howie, Dr. J. C. Herbertson, Dr. P. M'Bryde, Dr. D. MacGilvray, Dr. Carstairs Douglas, Dr. Jane B. Henderson.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1900-1901.

MEETING IX.—1ST FEBRUARY, 1901.

The President, MR. H. E. CLARK, in the Chair.

DISCUSSION ON THE "PROVISION FOR THE TREATMENT AND RELIEF OF THE TUBERCULOUS POOR."

The discussion was introduced by Professor M'Call Anderson, Dr. J. Lindsay Steven, and Dr. A. K. Chalmers.

A. INCIPIENT STAGE OF TUBERCULOSIS.

BY PROFESSOR M'CALL ANDERSON.

When the Council of the Medico-Chirurgical Society did me the honour of inviting me to open a discussion in reference to the "Provision for the Treatment and Relief of the Tuberculous Poor," my first impulse was to ask to be excused, because this winter, as many of you know, my time is so fully occupied with my public and other duties; but, on reflection, I came to the conclusion that I could not decline an invitation so courteously conveyed, more especially as I feel that the chief value of such meetings consists in the discussion which follows upon the introductory addresses, and which should, therefore, be short and to the point.

In one of the numerous letters in the *Herald* on the treatment of the tuberculous poor, I was surprised to read the statement that "doctors seem too busy, as a rule, to devote themselves to public action," while it is well known that they have been the pioneers in connection with almost all the advances in sanitation in recent years; and this large and influential meeting, composed as it is mainly of medical men, is an excellent illustration of their ceaseless endeavours to do what they can to improve the health, and to increase the happiness, of their fellow-men.

The subject, I am led to understand, is to be considered under three heads, viz.—(1) Cases in the incipient stage of tuberculosis; (2) cases in the middle stage; and (3) advanced cases; and I am asked to deal specially with the first of these. But I confess that I feel some difficulty in dissociating the first class of cases from the second, as similar treatment applies to both, although, of course, the prospects of success are not so hopeful in the latter.

I propose, first of all, to refer to those methods of treatment which have commended themselves to me in dealing with phthisis in general, but I shall on this occasion do little more than glance at them, as I have had frequent opportunities in this and other societies of giving my opinion with regard to them; and I shall conclude by indicating those which appear to me most suitable for the treatment and relief of the poor.

I have long been deeply interested in the subject of pulmonary consumption in its practical aspects, and have always taken a hopeful view with reference to the prognosis of this disease, having never discovered any reason why patients suffering from consumption should not recover so long as a sufficiency of healthy pulmonary tissue is left to carry on the function of respiration.

Many years ago the late Dr. MacCormac, of Belfast (father of Sir William MacCormac), made the observation that, in his opinion, consumption was due to the inhalation of re-breathed air, and few nowadays will be inclined to deny that there is a sound basis of truth in the suggestion. At all events, it is undoubted that pure air is a most important factor in warding off and in curing consumption, so that much remains to be done by the local authorities—in the way of prevention at all events—with the view of providing more wholesome dwellings for the working classes, and of rendering the atmosphere more free from impurities.

[The speaker here alluded in passing to an experiment made by his friend, Dr. Denis, of New York, when crossing the Atlantic. By exposing three culture tubes in the saloon, in the cabin, and on the forepart of the deck of the vessel, he was able to demonstrate how impure was the atmosphere of the sleeping cabin and saloon.]

And yet we find that it is not an uncommon custom to coop up phthisical patients in a couple of rooms during the winter months, quite regardless, apparently, of the serious disturbance to the general health entailed by such a procedure.

The question of climate, therefore, merits our most serious consideration, and there can be no question that excellent.

results have, in many cases, accrued from attention to this point, and especially as the result of long sea voyages and of prolonged residence in high mountain valleys. As regards the first of these, it must be observed that a voyage has a very different effect from a residence at the coast, and sailors have repeatedly informed me that they always suffered from colds when on shore, which never left them until they were fairly out at sea again. This method of treatment is specially applicable to those who are fairly good sailors, and who have a liking for the sea; and they should be warned to spend the whole day, and every day, upon deck, and, when possible, to have the port holes of their berths open at night. The beneficial results often observed under favourable conditions depend not only upon the purity of the air, but also upon the comparatively equable temperature at sea, and upon the enormous appetite which so often accompanies a life on the ocean wave. One of the most suitable voyages is round the Cape to Australia in a first-class ocean steamer, in a deck cabin if possible, the voyage being so timed that the patient, leaving this country in October, arrives in Australia towards the close of the year. But a mistake which is too often made by patients who have recovered their health on the voyage, is to disregard instructions, and, instead of returning after a short stay, to remain in Australia, and especially in towns such as Melbourne, where consumption is very rife, and where all the improvement is apt to be lost, too often never to be regained.

Experts are by no means unanimous as to the reason for the marvellous improvement which so often results from a residence in high mountain valleys, but there are good grounds for believing that it depends upon a combination of circumstances. In the front rank must be placed their elevation, with, as a consequence, the rarefaction of the atmosphere, the bracing coolness, and the purity and aseptic qualities of the air. Some of the benefit may also be ascribed to the intensity of the solar radiation, and to the dryness and stillness of the air. It is a mistake, however, to suppose that the inhabitants of elevated regions enjoy complete immunity from phthisis, but when such cases occur they generally result from inhabiting filthy, badly ventilated, and damp houses, and from otherwise setting at defiance the recognised principles of hygiene and of diet.

In the selection of a suitable locality we have an abundant choice in various parts of the world, such as the Neilgherry Hills, the Kirghiz Steppes of Asiatic Russia, Davos Platz and

the Engadine in Switzerland, many localities in the Highlands of South Africa, and numerous health resorts in the United States, Ecuador, and Mexico.

In an interesting publication on Davos Platz, "by one who knows it well," the writer says—"The first two patients of which the place can boast were happy in their choice when they selected Davos . . . as the spot to test on their persons the then still debated system of treating consumption by a residence in high Alpine air. One of them was a German medical man of experience, who arrived with good diplomas in his pocket, but a very bad lung under his waistcoat. He was accompanied by a young friend of pleasing but effeminate exterior, whose face, guiltless of the capillary appendages usual to the masculine countenance, gave rise to the belief in the minds of the then unsophisticated peasantry that he was a Polish princess in disguise; and the uncomfortable result was that the door of the one modest hostelry was for long closed against the pair on that wintry afternoon. Notwithstanding this inauspicious reception, the German physician and his supposed lady-love regained health rapidly, and when they showed themselves again in Germany, were admirable living advertisements both of the system and the place." There are few of my hearers who are unable to recall from their own experience illustrations of the benefits of a residence at Davos Platz.

I shall only refer in passing to one other of these numerous health resorts, namely, Colorado. Dr. Chas. Denison, who was himself cured by a residence at Denver, the capital of Colorado, a city lying at an altitude of 5,200 feet, has given a charming account of the life which should be led by sufferers from consumption, and of the benefits accruing therefrom. "Let the invalid tourist, on his arrival in Colorado, remain ten days or a fortnight in one of the lower towns—Boulder, Denver, Pueblo, or Canon City, as the case may be—and from thence, if desirable, advance gradually, by rail, horseback, or wagon, to higher levels, as the enfeebled lungs accustom themselves to the rarefied air.

"One of the best methods of gaining the altitudes, and of obtaining the highest possible benefit from air, sunshine, exercise, and elevation, is by *camping out*. In the pre-railroad days, when all who crossed the plains were compelled to do so in a wagon, or with an ox-team, the degree of improvement was greater among the consumptive invalids than it is at the present time, because then all phthisical patients, even though they left home upon a mattress, *must*

live in the dry, open air, sleep under the stars, and often do their own cooking.

"The charm of this unique country lies in its variety, its capability of developing new and interesting features, and the novel experiences it offers wherever one may turn. The mountains, with their beautiful parks and cañons, are accessible from most of the first stopping points upon the railroad by less than a day's ride.

"Armed, equipped, and outfitted, a party may follow one of the creeks up a rugged cañon, camping at nightfall upon the banks of the stream beneath the crags; finally, they reach a park above, where they pitch their tent in a wooded vale near a tumbling mountain stream, . . . and spend weeks delightfully, sketching, botanising, geologising, fishing, or hunting, but always and ever recuperating. . . . As one has wisely said, 'No one need be afraid of the sunlight of Colorado. It has all the beneficial effect of sunlight in other countries, with none of its enervating effects common elsewhere. *Bask in it*, enjoy it all you can, for few have as yet fully appreciated the beneficial effects of the chemical action of sunlight on the blood.'

"As for the sunsets of Colorado, they are, as we have said, truly unsurpassed. No artist, without incurring the imputation of exaggeration, could do full justice to the vivid tints and gorgeous colours which bathe our western skies after the sun has sunk below the mountain horizon.

"To see one of these camping parties coming in from the mountains, after 'roughing it' for a month or two, is sufficient to convince the most incredulous of the utility of the *régime*. They left the plains thin, languid, and pallid; they returned bronzed and rugged, with elastic tread and full chests, gladly owning that to the experiences of camping out they owe a new lease of life. It is an opinion which I have previously expressed, that to the fact of *sleeping upon the ground* in the pure, dry air, amid the balsamic exhalations of this primitive resting-place, may be attributed much of the happy result of camping out. The system, roused by the tonic influences of earth and air, wakes into new life and vitality, and morbid feelings and conditions wear away."

Time will not permit of my dwelling longer upon this class of health resorts, but it will be admitted that sea voyages and residence in high mountain valleys constitute the very essence of the out-door treatment of consumption. They have, however, one drawback—many patients feel acutely their banishment from home, and if, unfortunately, the case terminates

fatally, it is sad to die in a foreign land and away from one's own family and friends.

"The open air treatment of consumption," as the term is understood in this country, is no new thing. It has stood the test of forty years in Germany and in Colorado. Indeed, it is but a modification of the climatic treatment just referred to. It consists essentially of keeping the patient in the open air from morning till night, and freely exposed to it from night till morning, in combination with a very generous diet. Exercise is most carefully regulated, so as to avoid any decided elevation of temperature or other untoward symptom, and when there is fever the patient is kept in bed. The results of this treatment have been so remarkable that it is not astonishing to know that, in recent years, multitudes of sanatoria have sprung into existence in almost all parts of the civilised world. I am free to confess that, when the Consumptive Homes at Bridge of Weir were first started, I was not favourable to the undertaking, for the simple reason that it was intended to run them on the old lines, but Mr. Quarrier is far too wise a man to turn his back upon the newer developments, and, now that the open air treatment has been successfully inaugurated, they are worthy of every sympathy and support. And Mr. Quarrier has thus added yet another to the many obligations under which he has laid us in his increasing efforts to add to the happiness, and to improve the moral and physical condition of the poor.

Two summers ago, while staying with my friend Dr. Lawson, in Somersetshire, I visited with him the sanatorium at Mendip. I had hardly entered the grounds when the medical superintendent, pointing to a gentlemen, said to me—"There is a patient of yours." I had seen him about nine months previously, in consultation with Dr. Carlyle, of Greenock, at which time he had a large cavity in the upper lobe of one lung, with pronounced constitutional symptoms. He was now the picture of health, and his lungs were sound. This is but a sample of the results which have been obtained at this admirably conducted institution.

Coming nearer home, we find the same encouraging results, as stated in the annual report of the Consumptive Sanatoria at Bridge of Weir, although many of the patients received were in a pretty advanced stage of the disease. Of the cases treated, 20 per cent are reported cured, 28 per cent almost well, and 25 per cent very much improved, while all the cases save one had improved. All gained in weight, the average weekly gain being 1 lb. 4½ oz. But I am not here to offer

proofs of the efficacy of this treatment. It is too late in the day for that, because it is an established fact that, when carried out with due care and discrimination, it yields excellent results, as most of you, from experience among your own patients, must have had the opportunity of verifying.

There is only one point in this excellent treatment which, in my opinion, is open to criticism. I offer no objection to patients taking exercise in the midst of rain or snow, and getting drenched; but I cannot see how much can be gained by allowing them to sit in their wet clothes on returning home. It may be quite true that, as a rule, they do not suffer therefrom, and that it constitutes a part of the "hardening" process; but this may be carried too far, and I am of opinion that, whatever the ailment may be, or even if there is no ailment at all, there is always a certain risk which it seems unnecessary to run, while any advantage to be gained must be very small.

And now, in conclusion, it remains for me to give my view of the kind of provision which should be made for the treatment and relief of the tuberculous poor, and which you probably have in a measure gathered from what has been already said.

A good many years ago, being much impressed with the advantages to be derived from sea voyages, and from residence in high mountain valleys, I conferred with some of my richer friends with the view of raising a fund to be spent, not in stone and lime, but in sending patients abroad. They went into the matter with great cordiality, but, on consideration, the conclusion arrived at was that it was too large an undertaking, and beyond the resources of private effort. But it is not beyond the resources of the local authorities, and it is a question whether, in certain selected cases at all events, the tuberculous poor should not be dealt with in this way. It has been calculated that the average cost of each phthisical patient in a sanatorium cannot be less than fifty pounds, while, in the case of a nursing sister who was formerly connected with my wards, and who, on becoming consumptive, was sent to Colorado, the sum expended was much less than this, and yet it resulted not only in her restoration to health, but also in a very material improvement in her position.

And, again, a man who has had some experience of a seafaring life might, in the early stages of the complaint, readily secure a berth on board ship, where he would have a good chance of recovering his health while earning a "living wage." But, even if he went simply as a passenger, the cost need not

exceed that of residence in a sanatorium. For the majority, however, it appears to me that the time has come when sanatoria should be erected, in suitable localities, at the public expense, on the same lines as those which are springing up on all sides for the relief and cure of the wealthier classes. The initial expense will doubtless be considerable, but the restoration to health of thousands of the working classes, especially in the case of the heads of families, must ultimately lead to economies in other directions. But even were it not so, surely no one would grudge the cost if it conduces to the health, and happiness, and prosperity of those who are not in a position to help themselves. I am, therefore, in full agreement with the *Glasgow Herald* when it says in a leading article—"So far as the parish authorities and the ratepayers are concerned, it is more economical—as well as more humane—to assist the lowly breadwinner to restored health than to let him die, and to be afterwards called on to maintain his widow and children."

This fact has been so fully brought home to three of the urban bodies in the vicinity of Liverpool as to have led them to erect and maintain a sanatorium for the treatment of the poor suffering from consumption.

It appears that the Glasgow Parish Council has been considering the propriety of making provision for phthisical patients in their new hospital at Stobhill, but, as Dr. Erskine has well remarked, "such an arrangement will not prove satisfactory to the great body of working people, who, very naturally, object to the stigma of pauperism." And he has further pointed out that in 1881 the local health authority resolved "that all classes of citizens suffering from infectious disease should be treated in hospital, without any charge being made therefor."

It having been proved that tubercular disease is infectious, the logical sequence is that provision should be made for its treatment by the municipality, and not by the Parish Council. And, judging from past experience, I have perfect confidence that, if we can satisfy the members of the Town Council and of the health committee that consumption can be cured by the means which have been indicated, they will take up the matter with their wonted enthusiasm, and carry it to a successful conclusion. And if this should be the result, we—the working members of the medical profession—will feel that our labours have not been in vain, and will ever be grateful to them for supplementing our efforts to improve the health of the community, and to add to the sum of human happiness.

B. THE TREATMENT AND RELIEF OF THE TUBERCULOUS POOR.

BY DR. JOHN LINDSAY STEVEN.

On 18th December, 1891, I had the honour of being called upon in this Society, under the presidency of the late Professor Joseph Coats, to open a discussion upon the subject of "Tuberculosis as an Infectious Disease," which was fully reported in the *Glasgow Medical Journal* for January, 1892. This discussion led to important practical results, which were not confined to Glasgow. The exhaustive report which, as the result of this discussion, Dr. J. B. Russell drew up for the Health Committee of the Corporation of Glasgow, and which was published in 1896, has had far-reaching results, and was especially appreciated in the United States of America. In the nine years which have intervened, the attitude of the medical profession towards the question of tuberculosis has somewhat changed, and the character of this change of attitude is well illustrated by the subject of the discussion upon which we are now engaged. In 1891 we aimed not only at convincing the body politic of the infectious quality of tuberculosis, but also at the practical demonstration to a section of the medical profession itself of the truth of this doctrine. That this attempt was successful is proved by the change of attitude with which we approach the matter to-night.

Even in 1891 the important question of the prevention and treatment of tuberculosis emerged almost inevitably as a result of the discussion then held; but the question of prevention and treatment was an incidental, and not the chief aim of the debate. Now, it may be admitted that the thesis of the previous discussion has been proved and generally accepted, and that our chief concern at present is to deal in a practical manner with the larger matter of the relief and treatment of the tuberculous poor, but can we hope that the object of our present discussion will be so easily and rapidly attained? The difficulties are undoubtedly great, but not, let us hope, insuperable. Let us remember how many years of patient labour and research were necessary before the practical demonstration of the infectious nature of tubercle was possible, and, remembering this, let us not despair if our progress towards practical and generally applicable measures of relief and prevention seems to be somewhat slow. A remark of Sir William T. Gairdner, who took part in our previous debate, may here be recalled as containing the gist of our

contention at that time. He said—"He went with Dr. Steven, and assented to, and agreed with, his views on the infectious nature of tuberculosis. He thought it was impossible to have considered the question in the light of what had come from Villemin, and also been shown by Cohnheim, even before the discovery of the bacillus, and finally proved with almost mathematical precision by Koch, and not to conclude that tubercle is an infectious disease. Nay, he was in the habit of putting it even more strongly—that tubercle was the one disease whose infectiousness was established by irrefutable evidence." This statement, coming from an authority so eminent, and a clinical observer so keen and practical, as Sir William Gairdner, cannot fail to carry the greatest weight. Tuberculosis is an infectious disease, and therefore all our efforts at relief and treatment must be founded on this conception of its essential nature.

Before passing on to speak of the provision for the treatment and relief of the tuberculous poor, it is essential to refer briefly to the great practical difficulties which surround the subject. Perhaps the greatest difficulty of all is the tremendously widespread prevalence of tubercular disease; the enormous number of persons who, in some way or other, are affected by the various forms of tuberculosis. The numbers are so great that practical men almost instinctively shrink from the magnitude of the task set before them. I remember well a conversation I once had with Sir William Gairdner on this point. On my referring to the provision for the tubercular poor as a subject of legislative enactment, he remarked that he was afraid the tubercular members of the community might outvote their healthy brethren if the question ever came to a division. Such a remark, from such a source, is a sufficient illustration of one of the greatest difficulties in our way.

Another difficulty is the attitude of our general hospitals and infirmaries towards tubercular disease. Tubercular patients are now, as far as possible, being systematically refused admission to general hospitals. This applies more especially to phthisis pulmonalis, but also, though in a more limited way, to cases of chronic surgical tuberculosis. The necessary result is that great numbers of the tubercular poor are left without sufficient medical or surgical relief.

There are, perhaps, two reasons which may be urged in support of such a policy on the part of our large general hospitals. First, there is the recognition of the infectious quality of tuberculosis, and the resulting fear that the admission

of tubercular patients may prove a source of danger to the other inmates of the ward. This, however, is a danger the importance of which may very easily be overestimated. In 1891, Dr. Alexander Robertson, speaking from a lengthened experience, expressed his conviction that the danger was not great, and in so speaking I believe he expressed the opinion held by many medical men, among whom we may, perhaps, include Dr. J. B. Russell, as judged by the statements in his classical report. But though the danger be slight, I think it must be admitted to be real.

Lately, in association with my colleague, Dr. T. K. Monro, I have been called upon to examine nurses affected with tuberculosis of the lungs, with regard to whose cases it might, perhaps, not unreasonably be inferred that the disease had been contracted in the discharge of their duties. From the prolonged period of incubation of tubercular disease, it is not easy to demonstrate its directly infectious nature, but we are almost bound to admit that tuberculosis, like leprosy, is a "communicable disease."

The second reason for the present attitude of the general hospitals towards tuberculosis seems to me to be found in the fact that for the most part tubercular patients are not benefited by treatment in general wards. It follows, then, for both of these reasons, that the cases must be provided for elsewhere.

A third difficulty, which must on no account be overlooked, is found in the circumstance that, in the earlier and intermediate stages of tuberculosis (stages, I freely admit, which it is almost impossible accurately to define or to demarcate), the patients are frequently not in a condition to lead them to believe that they require constant or prolonged medical supervision, and especially such rigorous medical supervision, as entrance into a public institution implies. Here, as in the treatment of chronic alcoholism, the fact of the liberty of the subject has to enter into our considerations. There is no such virulence or rapidity of action in the infectious quality of tuberculosis as must be reckoned with in the case of a disease like small-pox or bubonic plague, which would justify the rigorous application of the enactments of sanitary law. A consideration of this point renders it evident that it must be very difficult to formulate any method for the compulsory treatment of tuberculosis, founded on the different stages of the disease as they are met with in the same or in different individuals.

When the Council of the Society were making the preliminary arrangements for this debate, it was suggested that

the opening speakers might take up the subject with special reference to the early, the intermediate, and the late stages of the affection. But on thinking over what I should say, it appeared to me, in view of the important considerations involved in the question of the liberty of the subject, and the difficulty of defining the different stages, that it was better to proceed on general lines. It must be clear to every physician of experience that, in the earlier and intermediate stages of tubercular disease, patients are frequently met with who are compelled to work and play their part in every-day society, and who may safely do so without undue danger to the health of their neighbours. A consideration of the stages of the disease, then, does not help us very much in our present endeavour. No longer than a week ago, on the same day, I saw in consultation two cases of tubercular disease of the lungs which illustrated well the difficulty of which I am now speaking.

One case was that of a girl, who had been acutely ill for a month, and who previously had never been seriously unwell or unable to follow her occupation. When I saw her it was obvious, both to her medical attendant and to myself, that she was suffering from acute general tubercular disease of the lungs, and was already within measurable distance of death. The other case was that of a young man, aged 26, who was evidently in *articulo mortis* from pneumo-thorax, the result of a ruptured cavity, and who died the day after I saw him. Yet, in spite of an open tubercular sinus in his neck, and widespread chronic tubercular disease of his lungs, the presence of which was well known to his doctor, he had been vigorously engaged at his work as a measurer until a week before his death. And it must also be stated that he was so successful in his work, and so useful to his employers, that quite recently he had been promoted in his office, and had received a substantial addition to his salary. Such cases are frequent in the experience of all medical men, and render it evident that the tubercular patient must often, from stress of fortune, continue at his labour and mingle among his fellows to the end.

I might also, in this connection, refer to the difficulties of diagnosis in the earlier stages of tubercular disease, but perhaps this may be left to subsequent speakers.

Well may we admit that the task set before us is no light one; but surely the difficulties are not insuperable. I think not. Indeed, I believe that the difficulties are even now being successfully grappled with. The effective treatment of the tuberculous poor means the prevention of tuberculosis. The

relief of the fever-stricken patient means the prevention of fever; and so, indeed, it has proved in the case of the specific fevers. I believe that the first step in the treatment and relief of the tuberculous poor has already been taken. I mean the first step of driving home to the professional and public mind the conviction that tuberculosis is a preventable disease, and ought to be prevented. One evidence of this first step having been taken, is the foundation of the National Association for the Prevention of Tuberculosis, an association which has roused the public conscience in the matter. The gravity of the situation, and the urgent necessity for concerted action, are everywhere fully recognised, from the steps of the throne itself to the very thresholds of the poor. The pages of the great medical periodicals are full of the subject, and from week to week a record of progress is made. The difficulties, indeed, are great, but the situation is not without hope.

There are, it seems to me, two ways in which the provision for the treatment and relief of the tuberculous poor may be attempted:—

1. By private beneficence and charity.
2. By state or municipal provision.

As examples of the first method may be mentioned the numerous charitable institutions which the benevolent have founded for the treatment of the tubercular poor. The work accomplished by such institutions is good, and its value is great in several ways. They point out the direction in which further effort must proceed; they satisfy the humanitarian and benevolent instincts of the community; they supply practical training schools for medical men; and, most important of all, they afford medical care to large numbers of the tubercular poor. Such institutions deserve every encouragement and support, but the limitations of their usefulness must never be forgotten.

Such benevolent and charitable effort touches only the hem of the voluminous mantle of tubercular disease which envelopes humanity. Benevolence, however princely, and charity, however kind, can never remove that mantle and clothe humanity in a garment of health. So far as charity is concerned, tuberculosis, like the poor, must always be with us. Infected individuals may be relieved and cured, but something more than the relief of individuals must be aimed at.

In thus speaking of the existing provision for the cure of the tubercular poor, the valuable part played by the general practitioner of medicine in crowded cities and in sparsely populated country districts must not be forgotten. When

infirmaries faint and sanatoria fail, the cry of the poor is ever to the general practitioner in their midst, and to the credit of the doctors be it said the cry is not in vain. Their ready help and their sagacious advice are frequently the only comfort of the man mortally stricken with tubercular disease, and so long as society is constituted as it now is, the part played by the practitioner of medicine must always be a most important one in the fight with tuberculosis.

While accepting all the help that charity can afford, and that medical men can give towards the treatment and relief of the tuberculous poor, it is every day becoming more and more clear that we must turn to the central government, to the county councils, and to the municipalities of our country for effective help. In no other way can we hope to produce that effect upon tuberculosis which may ultimately lead to its being stamped out. And how are our sanitary authorities to proceed in the campaign against tuberculosis? I have spoken so long that I can now do little more than indicate the provisions which we might naturally expect the State to supply. None of the propositions which I now place before you can be regarded as new or original, all of them in some form or other have been suggested before, but they may afford material for subsequent discussion. There may be other means of providing for the effective treatment of the tubercular poor, but these I am about to mention, I think, are essential. Further, I may add that I do not think we are yet arrived at the stage at which anything like legislative legal compulsion can be applied to the personal medical treatment of the tubercular man. The following are suggested provisions:—

1. Means for educating the public as to the true nature of tubercular disease, and as to the means to be adopted for its prevention.

2. The institution of some measure of notification. Compulsory notification will not do, but already efforts at voluntary notification are being made.

3. The provision of sanatoria, supported by the rates, to which all the tubercular poor would have the right of entrance in hope of cure.

4. The provision of homes of rest for hopeless and dying cases.

5. The disinfection of dwelling-house, bedding, and clothing after death from tubercular disease has occurred.

6. The stringent enforcement of general sanitary law, especially with reference to its bearing upon tubercular disease.

These are some of the provisions which the State might make for the efficient treatment and relief of the tuberculous poor, and I think we are already in the way of having them, at least, partly accomplished. The expense and the trouble of carrying out such provisions will necessarily be enormous, but the result, as expressed by the improved health and vigour of the people, will prove that the money has been well spent, and the great labour not in vain.

C. MUNICIPAL POLICY IN RELATION TO TUBERCULOSIS: THE TREATMENT AND CURE OF ADVANCED CASES AMONG THE TUBERCULAR POOR.

By DR. A. K. CHALMERS.

It is possible here to take many things as accepted, which before a lay audience it would be necessary to support by some appeal to argument. But at the outset it is desirable to distinguish between the two great classes of tubercular disease—(1) pulmonary phthisis, and (2) the tubercular diseases which are not phthisis (tabes mesenterica, tubercular meningitis, acute phthisis or generalised tuberculosis); thus distinguishing in a general way between the tubercular diseases of childhood and those forms which most prevail in adolescence and adult life—although there is evidence which I believe could be largely increased from the pathological records, that phthisis in the first year of life is more common than is generally accepted. In the main, however, the general distinction is accurate, and the next point for consideration is the local distribution of these two classes. It might readily be surmised that both classes would exist in a community side by side—that where phthisis was most prevalent, there also we should have the greater incidence of the other forms; but any evidence at present available on this point does not support this impression. Phthisis is relatively most prevalent when the general death-rate is greatest, but one might point to several districts in our own city where a high death-rate from phthisis is not associated with a corresponding incidence of the other forms. This disparity in the distribution suggests a difference in the source of the infection, and it is further emphasised by the different direction in which the death-rates of the classes are at present moving. The death-rate from phthisis is decreasing, while that from the other forms, if not stationary, has still not shown any corresponding decrease. The application of this fact would seem to be

that while phthisis may perpetuate itself by causing phthisis in others, it is not to be held responsible in any great measure for those other forms of tuberculosis which we have seen chiefly affect the earlier years of life.

The argument here is obviously in the main statistical—in essence it can scarcely be anything else, but it is evidence such as this which has paved the way for the conviction that the tubercular diseases of early life are related to food, while one form of tubercular disease which, above all others, predominates in adult life, *i.e.*, phthisis, is not. Here, then, is a definite line of partition by which preventive action may be guided, but the action follows diverging lines. It ends, in the one case, in supervision of food supplies; in the other, it is concerned more definitely with the conditions under which the individual lives and works, and it is to this latter that the following remarks apply.

We are agreed, I think, (1) that phthisis is communicable, and therefore preventible; (2) that heredity plays an unimportant, and individual susceptibility a considerable part; (3) that susceptibility can be acquired under certain fairly defined conditions; and (4) that in probably an increasing measure the disease is curable.

Inherited susceptibility has long been recognised; acquired susceptibility is produced under fairly defined conditions. Phthisis has a recognised place in the diseases of occupation, and the increased relative prevalence of the disease among males during the last thirty years is one of the most striking changes which the Registrar-General's returns afford.

It would lead me far from the intention of the present discussion were I to occupy your time with any consideration of the conditions which tend to produce susceptibility in the workshop or dwelling. We know that no race of mankind is free from the disease, or rather that men of every race, under given conditions, may acquire it. The causes, therefore, are to be regarded as peculiarly local, and it is those local conditions which it is the duty of a local authority to combat.

Mr. Motion said that 312 cases of phthisis pulmonalis were admitted into the hospitals under the Glasgow Parish Council during the past six months. The Council had arranged to erect new hospitals capable of accommodating over 1,300 patients. These hospitals were to be apart from the poorhouses, and phthisical patients were to be treated in special wards. The Council was also arranging to build wards for the treatment of insane phthisical patients in Gartloch and Woodilee Asylums.

Dr. Dougan said the Public Health Committee was endeavouring to prevent the introduction of tubercular meat and milk. It had succeeded in the case of the meat, but not with the milk. The Corporation is willing to do anything that can be done to prevent the spread of tuberculous diseases. The members of the Council depend on medical societies for information, and they will not grudge money.

Bailie Anderson said we should educate phthisical patients to destroy their sputum. We should stop all milk from tubercular cattle, and get more power to deal with tubercular cattle. He was not in favour of municipal sanatoria, but he was in favour of voluntary notification and cheap houses.

Bailie Steel said if phthisis pulmonalis is an infectious disease, then phthisical patients should be isolated, but the cost would be so great, and the rates were so heavy, that he was afraid there would be an outcry against it. If the people cared to pay, he was in favour of municipal authorities building hospitals for the treatment of phthisis.

Dr. Carswell said we must take into account the prevalence of this disease. In the early stages of the disease a man is perfectly able to follow his usual employment, and it would be hard to compel such a patient to enter a sanatorium, but he was in favour of compelling all advanced cases to go into an institution. Suitable accommodation was being provided in parochial hospitals for phthisical patients, and he thought the people would by and by be willing to enter these institutions just as willingly as they go into parochial asylums or infectious hospitals.

MEETING X.—8TH FEBRUARY, 1901.

The President, MR. H. E. CLARK, in the Chair

ADJOURNED DISCUSSION ON THE "PROVISION FOR
THE TREATMENT AND RELIEF OF THE TUBER-
CULOUS POOR."

Dr. Erskine held it was the primary duty of local health authorities to ascertain the extent of the prevalence of phthisis pulmonalis, and to discover and deal with individual cases. While all forms of tubercular disease ought to be included, it

would be most practicable to begin with tuberculosis of the lungs, as that disease was clearly defined and admittedly infective. Information was already being obtained by local authorities in regard to the occurrence of cases of phthisis. The medical officer of health for Glasgow already received notification of consumption in several ways—

1. The services of the sanitary department had been placed at the disposal of the ratepayer for the purpose of carrying out the necessary washing and disinfection in any house in which a patient had died from consumption, or from which he had been removed to hospital. Additional knowledge regarding tuberculous cases was obtained by offering similar assistance in the way of disinfection and washing where such patients suffered from any discharge.

2. Another means of notification of phthisis had been instituted by the appointment of a bacteriologist to the Corporation of Glasgow. Practitioners within the area of the city were invited to send samples of sputa from suspected cases, accompanied by name and address. The discovery of tubercle bacilli thus established a diagnosis, and notified the existence of a particular case.

3. A form of voluntary notification had been initiated by the Health Department authorising Dr. Chalmers to issue schedules to public medical establishments, such as the parochial hospitals and dispensaries, and the larger charitable institutions such as the Royal and Western Infirmaries and dispensaries, requesting the medical officers to make a return of the patients suffering from consumption, giving names, ages, and addresses. The notification obtained from such institutions would be especially valuable, for the reason that a large proportion of the patients resorting thither belonged to the class who were not likely to have had any private medical attendance.

The medical officer for the city had even now gathered together much important information in the way of notification from the sources indicated, but from lack of assistance he had been hitherto unable to utilise it in the way of dealing with individual cases. For this special class of work a medical man should be at once added to Dr. Chalmers' staff.

Dr. Erskine advised voluntary notification by medical practitioners, with sanction of patient and others concerned, as had already been adopted by the health authority of Manchester. Payment of a fee should be made in each case, equal in amount to what was given for presently notifiable infectious diseases.

Compulsory notification was not only inadvisable, but quite unnecessary at present, as sufficient information was practically obtainable to enable local authorities to make a good beginning in dealing with consumptives. The excuse of lack of knowledge on the subject pled by members of representative public bodies arose from an exaggeration of the financial difficulty, and prompted a policy of delaying action as long as possible. From the point of view of infection, it was clearly within the province of the local health authority to find the cases of phthisis and deal with them in the public interest. In a large proportion of such cases, supervision would only be required, as the patients would be able to attend to their ordinary duties. In respect to removal and isolation, consumption is not comparable to the infectious fevers. Health authorities are disinclined to face the work of dealing with consumption, owing, primarily, to the magnitude of the undertaking, which they willingly exaggerate by imagining the necessity for removal and isolation of *all* patients in hospitals and sanatoria for long periods of time.

Provision should be made by the municipality for the isolation of such chronic patients as are living in overcrowded houses, and are constant sources of danger to the community. Advanced and hopeless cases should be removed to a hospital provided by the rates, with a view to preventing the disease by removing so many potential foci of infection. The Health Committee of the Corporation of Edinburgh had recently made a definite recommendation that one hundred cases of patients in the last stages of consumption should be provided for in the wards of the present infectious diseases hospital, soon to be vacated on the opening of the new fever hospital.

Dr. Erskine explained what the Glasgow Health Committee had done and were presently doing in the way of preventing tuberculosis. As a local authority, that was their special function in health administration. In recent times, a more stringent enforcement of sanitary law had been carried out. Drainage, ventilation, lighting, cleanliness of stairs, lobbies, and closes, hose-washing of streets, lanes, and back-courts, had been much more extensively attended to. The Corporation sub-committee on tuberculosis, among other proposals, had strongly recommended that the minimum space in dwellings for each adult should be raised from 400 to 500 cubic feet, and that the statutory space in workshops should be increased from 250 to 400 cubic feet. Of course, the carrying out of such regulation would displace a considerable number of people from one apartment houses, and the question arose—

Where was the necessary house accommodation to be got except by moving a considerable portion of the industrial population into the country?

Spitting, acknowledged to be the most dangerous mode of spreading infection among the travelling public, was now punishable as a police offence in tramway cars, but as yet very few prosecutions had taken place. The notice in reference to spitting in the cars should be much more prominent than at present.

The abatement of the pollution of the atmosphere by black smoke had been receiving the earnest attention of a special committee of the local authority in Glasgow, and already considerable improvement had been effected. Two qualified engineers had been appointed as inspectors, acting under the chief sanitary inspector, who were engaged not only in detecting offenders, but in advising reasonable and necessary alterations as to stoking and furnace construction. That course had been found preferable to bringing offenders before the magistrate, who could only inflict a small fine, which was not sufficient to deter them from repeating the nuisance. Of course, a prosecution was always instituted when other means of abating the nuisance failed.

A great reform had recently taken place in Glasgow in the inspection of meat. Instead of that being done, as formerly, by a few police constables, a staff of four veterinary surgeons and twelve qualified lay inspectors had been engaged to act under the health committee and the medical officer of health. Tuberculous carcasses of cattle, sheep, and swine were now seized which would formerly have been sold to consumers.

The inspection of milk, a much more dangerous medium of carrying tubercular infection than meat, was, as yet, not receiving the attention it called for. The only milk that was produced and distributed under fairly satisfactory conditions in relation to the prevention of tuberculosis was the supply to the municipal fever hospitals.

It was the duty of sanitary authorities, in reference to the prevention of consumption and other forms of tuberculosis, to educate public opinion on the importance of the subject. Medical officers of health, sanitary inspectors, and veterinary surgeons acting under local authorities should disseminate information and advice to the general public, cow-keepers, and the dairy trade by means of pamphlets and handbills. Illustrated lectures delivered by qualified persons, under the auspices of local authorities in town and country districts, would form a convenient and valuable means of popularising

knowledge on the general aspect of tubercular disease in man and animals. One of the best means of educating the people as to the prevention of the spread of tuberculosis of the lungs was treatment of phthisical patients in properly appointed sanatoria, as such patients during their stay would be fully instructed as to how they were to conduct themselves in relation to their neighbours and fellow-workers after they had sufficiently recovered to be able to leave those institutions.

It was desirable that provision should be made for the treatment and relief of consumptives by one central local authority. Parochial councils were already providing such accommodation, but such provision was objectionable owing to the stigma of pauperism which it incurred. The objection was a sentimental one, and was unreasonable, as a patient was just as much pauperised by removal to a municipal fever hospital as by admission to a parochial institution, both being supported by public rates. As the municipality in its capacity of local health authority had imposed on it the duty of carrying out preventive measures and obtaining notification in reference to consumption, it should assume, in continuity of these functions, that of supervision of tubercular cases, sorting them out as to how and where they could best be dealt with, and providing sanatoria as well. The poor-law authority must co-operate with the health authority by accommodating cases of destitution or poverty, often the direct result of the chronic character of the disease.

If the municipal corporation, as a central local authority, assumed the responsibility for the relief and treatment of consumptives suffering from phthisis pulmonalis, as well as for the prevention of this disease, then all classes of ratepayers would be included. Wealthy and prosperous people would, of course, be eliminated, as they would be able to make the necessary provision for consumption occurring among the members of their own class or rank. For all classes between the wealthy and the destitute provision would have to be made by the municipality for the treatment of suitable cases in sanatoria or hospitals supported by public rates. Such charitable institutions for the treatment of consumption as presently exist, either as special sanatoria or with special pavilions or wards connected with general hospitals, might be subsidised by grants from public funds on condition of adequate representation on the boards of such institutions from the local authorities making such contributions.

Dr. Allan said—I gather from the statement which was made to us at last meeting by Mr. Motion, that ample hospital

accommodation will be provided in the near future for *pauper poor* who are affected with phthisis. As to the consumptive poor who are *not* paupers, and who are in the *early* stage of the disease, provision is being made for them at the sanatorium, Bridge of Weir. There still remains a section of sufferers whose claims are strong, and yet for whom there is no provision. I mean the poor who are *not paupers*, and who are in the *advanced* stage of phthisis. Such cases are practically excluded from our general hospitals because they are infectious, they are not wanted at a sanatorium because they are regarded as incurable, and they decline to go to the parochial hospitals because they are not paupers. It seems clear to me that this is the class of cases for which immediate provision should be made by erecting an "hospital," or "home," or "rest," where they would receive skilled treatment, and have their sufferings relieved. (Of course, the hope of a possible cure would not be lost sight of even in these bad cases.) I propose that this "hospital" or "home" should be composed of comfortable wooden huts or small pavilions, and that it might be erected in a corner of one of our public parks. There need be nothing depressing about the appearance of such an hospital. Let the huts be painted in bright, cheerful colours, and surrounded by trees, shrubs, and flowers. If necessary, it could be cut off from view by a belt of trees. It might be built and maintained by the municipal authority on the ground urged by Dr. Erskine, namely, that it is a provision for the isolation and treatment of a form of infectious disease; or it might be created and supported by private charity and voluntary contributions.

It is to be borne in mind that in thus separating the *advanced* cases of consumption from crowded localities and crowded houses, we would be taking a very important step in checking the spread of the disease. It seems clear to me that if we keep our attention concentrated on the question of providing for this class of cases (*i.e.*, the non-pauper tubercular poor in the advanced stage of the disease) we will very much narrow the scope of this discussion, and be more likely to come to some definite conclusion.

Dr. Alex. Robertson made the following suggestions:— (1) Voluntary notification to the public authorities; (2) remove the artisan class to better houses; (3) prevent spitting in public places; (4) prevent contamination of food by the disease; (5) treat the tubercular patient of the artisan class in public sanatoria.

Bailie Dick said that, in the meantime, voluntary notifica-

tion was needless, as we were not in a position to deal with tuberculosis. He was in favour of an institution where the advanced cases would be admitted and allowed to remain until they died. If the people were willing to provide the money, he was also in favour of public sanatoria for the treatment of the disease.

Councillor Mitchell thought if we improved our workshops we would considerably diminish the number of cases of tuberculosis.

Dr. Ness said the advanced cases of tuberculosis ought to be removed by the municipal authorities, and the cases suitable for treatment ought to be taken into country branches of general hospitals.

Mr. H. E. Clark made the following proposal, which was adopted:—"That this meeting of the Glasgow Medico-Chirurgical Society is of opinion that there should be formed in Glasgow a branch of the National Association for the Prevention of Consumption and other forms of Tuberculosis."

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1900-1901.

MEETING IX.—24TH APRIL, 1901.

The Vice-President, DR. JOHN EDGAR, in the Chair.

I.—FRESH SPECIMENS.

A. BY DR. JOHN EDGAR.

Carcinoma of cervix uteri — Vaginal hysterectomy — Recovery.—*Mrs. K.*, æt. 43, vii-para, was admitted into the Samaritan Hospital for Women on 6th December, 1900. Her complaint was that for six months she had been getting steadily weaker, and menstruation had been much more profuse than formerly. Each period had lasted six days, and in the intervals between them she had had a constant yellow discharge, at times blood-stained. For about two months before admission she had had a slight burning pain now and then in the left iliac region.

On examination, marked carcinomatous excavation of the cervix was found, but apparently the disease was limited to this part.

Unfortunately, patient was suffering severely from bronchitis and emphysema. I did not, therefore, deem it wise to subject her to the risk of a major operation, but contented myself with curetting the cervix thoroughly, and then swabbing it with pure formalin.

She left the hospital on 25th December.

Dr. Galt's report on tissue.—"Sections show epitheliomatous growths, with large cell-nests, and much inflammatory infiltration."

On 6th April, 1901, patient returned to the hospital free from bronchitis. In the interval she had improved greatly, she was stronger, and had gained 28 lb. in weight. There was no intermenstrual discharge; menstruation was regular, and of normal amount, the duration of each period three days. Pain was absent. She had been douching daily with boric acid lotion, and had been taking a tonic.

Operation (13th April).—Dr. Russell curetted and cauterised the cervix, and then Dr. Edgar pulled down the cervix with a large vulsellum forceps, and, after opening into the peritoneal cavity in front and behind, brought the uterus outside the vulva, without having cut any part of either broad ligament. Five catgut ligatures were next applied to the left broad ligament from above downwards, and the uterus freed on this side by means of scissors. This procedure was repeated on the right side. The ovaries were not removed.

A single catgut suture was inserted in the middle line, in order to partially close the opening, and the pelvic cavity was stuffed with two narrow strips of iodoform gauze. This gauze was removed on the fifth day.

Yesterday (eleventh day after operation) the opening was found nearly closed. Patient is very well. There has been no discharge, and temperature has been normal throughout.

I wish specially to draw attention to the good effect of curettage and formalin in this case.

B. BY DR. JOHN LINDSAY.

Dr. Lindsay showed an early hydatidiform mole.

II.—NOTES ON A CASE OF HYDATID MOLE, WITH SPECIMEN.

BY DR. ANDREW RICHMOND.

A. E., aged 20, millworker, unmarried, was first seen by me on 5th March, 1901. She was then suffering from sickness

and vomiting, which was more marked in the mornings and when she attempted to rise out of bed. This had commenced about two weeks previously, and was gradually getting worse. The areolæ of the nipples were much darker than one would expect to find in a virgin, but on enquiring as to her menstrual periods, she stated that she had menstruated a fortnight ago, that it had not stopped yet, and was different from her usual flow in that it was of a darker colour. The period previous to this was normal.

On examining her *per vaginam*, this discharge was found to be dark in colour and not very copious. The uterus felt slightly enlarged and the os normal.

On these grounds I gave my opinion to her mother that she was pregnant, and prescribed some ipecacuanha and bismuth for the relief of the sickness and vomiting. She was visited again in a few days, and her condition was pretty much as on my first visit, with the exception that I made out the uterus to be much larger than on the first examination. All the food she got was rejected, and her pulse was rapid and feeble, with temperature normal. The bloody discharge still continued, but was intermittent.

I saw her several times after this, and the uterus continued to enlarge very rapidly, indeed, quite out of proportion to what one would expect in a normal pregnancy. On being pressed for an opinion, I stated that it was likely to be a hydatid mole, and advised her to be removed to the hospital to get the uterus emptied, as she was getting very weak and losing flesh rapidly.

She was admitted to the Royal Alexandra Infirmary, Paisley, on 22nd March, 1901, and from the journal the above condition was noted, and also that the measurement round the abdomen at the level of the umbilicus was 26 inches. The areolæ round the nipples were very dark in colour. At this time there was no bleeding from the uterus. She was very sick after each attempt at feeding, and was put on small doses of calomel.

On 23rd March some milk and beef tea were retained, but, later, vomiting again commenced. She was put on nutrient enemata of 2 oz. milk and beef tea, peptonised, and given every four hours. The abdomen measured at this date 26½ inches; on the 27th, 27½ inches; 28th, 28 inches; 29th, 28½ inches. No foetal heart-sounds could be heard. The uterus was very large, and felt boggy and soft.

As her condition was not improving, it was decided to empty the uterus, and this was done under chloroform on

29th March. A uterine sound was first passed, then Hegar's dilators, until the os was about the size of the little finger. A thin rectal gum-elastic bougie was put in and left, and the vagina packed with sterilised gauze.

Previous to this being done her vagina had been douched daily with a solution of 1 in 3,000 perchloride of mercury. It was noted at the time that a thickish, bloody discharge was coming from the os.

At 7 A.M. on 30th March the bougie was removed, as strong pains had set in, and at 7.30 a large hydatid mole was expelled. The uterus contracted well on kneading, and was cleaned out by the fingers of the house surgeon, followed by an intra-uterine douche of perchloride of mercury. One-hundredth of a grain of ergotin in was injected hypodermically.

On 31st March, in the afternoon, patient had a slight rigor, and her temperature rose to 100.8° F., but fell again later in the night to 99° F. She was douched twice a day with perchloride of mercury.

On the morning of 1st April, under chloroform, I used a flushing curette, and got away a very large amount of broken-down mole tissue. The discharge was offensive, and fairly plentiful. Maximum temperature, 102° F.; minimum, 99.4° F.

On 2nd April her temperature rose to 103.8° F., with marked pain and tenderness over the abdomen on palpation or on movement as in vomiting or inhaling deeply. Pulse ranged about 130, and was weak and thready.

On the 3rd she was very ill, and, on calling a consultation of the staff, it was decided, by a majority, to keep her under the influence of morphia. Her temperature was as high as 104.2° F.; lowest, 102.6° F.; pulse from 148 to 168. She gradually sank after this, and died on the 7th, at which time her temperature registered 101.4° F. She was douched twice a day with perchloride of mercury, followed by a boracic acid douche.

A *post-mortem* examination was made on 8th April by Dr. Joshua Ferguson, and the following is his report. Examination of the abdomen only was permitted:—

“External appearances.”—The body is that of a well-developed and fairly nourished young woman. The mouth and nostrils are full of an offensive turbid yellow fluid.

“The abdomen is slightly prominent, is distended, and is tympanitic to percussion.

“When opened, the peritoneal cavity is found to contain over a pint of thick, purulent fluid. The omentum, deeply

congested, is lightly glued to the surface of the intestines by a thick, yellow, purulent exudation. The intestines are distended with gas, and are glued together and covered generally with exudation. The serous surface of the intestines and the peritoneum generally are congested.

"The pouch of Douglas is practically filled up with thick exudation. Below the left ovary, and along the left lower margin of the pouch, there is an area which is intensely congested, and almost gangrenous.

"The bladder is normal.

"Both ovaries are much enlarged, principally from the presence in each of a Graafian follicle filled with recent clot. The stroma is congested and œdematous.

"The uterus is enlarged. Its cavity measures $3\frac{1}{2}$ inches transversely between the internal orifices of the Fallopian tubes, and 6 inches longitudinally from os internum to fundus. Its walls are of a thickness varying from half an inch to one inch. The inner surface of the organ is gangrenous over its entire aspect, the necrosed tissue being roughest and thickest in the left upper region of the cavity, which corresponds to a pseudo-placental site. The necrosed tissue is apparently decidual in character, and is detached with only slight difficulty from the uterine muscular wall, except at the placental site. The necrosis does not extend deeper than the mucous membrane. The uterine muscle is not congested. There is no perforation of the uterine wall, nor any laceration of the muscular layers.

"The Fallopian tubes are patent and normal in every respect; their mucous membrane is not inflamed; and there is no sign of purulent exudation in their interior.

"In the posterior fornix of the vagina, on its left aspect, there is a partially healed laceration, measuring three-eighths of an inch by one-eighth of an inch. Around this the vaginal mucous membrane is deeply congested. The connective tissue is also acutely inflamed, and constitutes a direct tract between the laceration in the vaginal wall and the semi-gangrenous area in the pouch of Douglas above mentioned. The mucous and serous membranes are here in close anatomical relation, being separated by only a quarter of an inch of the inflamed connective tissue."

Dr. J. K. Kelly asked if there was any history to account for the wound in the vagina. This seemed to be the source of the infective inflammation from which the woman died.

Dr. Munro Kerr said that the source of septic infection

was evidently from the vaginal laceration. It was difficult to explain how the laceration occurred, as there was not much manipulation. It was a pity a microscopical examination had not been made, as deciduoma malignum frequently follows hydatid mole. In a case recently reported, a swelling found in the vaginal vault was shown to be deciduoma malignum. He did not approve of curetting the uterus in cases of hydatid mole, as it might lead to perforation of the uterine wall.

Dr. A. W. Russell had used a blunt flushing curette with good results in a case where the uterus had become septic.

Dr. J. Edgar referred to *Dr. Berry Hart's* theory that hydatid mole was due to an acute myxœdema. He agreed with *Dr. Kerr* that a curette should not be used, but the finger only, as the villi sometimes penetrate very deeply into the uterine wall.

Dr. Richmond replied, and said he could assure the Fellows he did not wound the vaginal vault.

III.—DEMONSTRATION OF PLACENTAL STRUCTURES.

BY DR. JOHN H. TEACHER.

Dr. Teacher gave an interesting demonstration, illustrated by sections placed under the microscope and by lantern slides, showing micro-photographs which were passed round the meeting. Various specimens of the following were shown:—

1. Placenta about thirty-fifth day. Villi with epithelium, consisting of two layers of cells which are not very well defined. (a) Langhans' layer; (b) syncytium.

2. A similar section showing an expansion of Langhans' layer in a villus at a part almost devoid of syncytium.

3. Placenta in the fourth month, showing villi with very marked expansion of Langhans' layer, where the villi are attached to the decidua.

4. Placenta at eighth month, showing the villi, foetal blood in their capillaries, and maternal blood in the intervillous spaces. The epithelial covering of the villi is reduced to a single layer.

5. Attachment of a villus to decidua, showing expansion of Langhans' layer and decidual cells.

6. Villi showing epithelium, especially the expansions of Langhans' layer, also portions of syncytium.

7. Sections of decidual tissue.

8. Deciduoma malignum (α) from a secondary nodule in the lungs, showing masses of Langhans' cells and syncytia

lying free in fluid blood. (b) The same, showing the enormous growth of epithelium (Langhans' layer and syncytium) on their surfaces. (c) The same, from a nodule in the lung, showing the thin processes of epithelium insinuating themselves into the lung tissue.

9. Decidual tissue, showing the large decidual cells and the uterine glands, with cubical epithelium and blood in their cavities.

He also showed Dr. Peters' book,¹ which gives a description of the youngest known human ovum, and referred specially to the part dealing with the mode of attachment of the ovum to the uterine decidua.

Drs. Edgar, J. K. Kelly, and Balfour Marshall made remarks, and *Dr. Teacher* replied.

IV.—DISCUSSION ON RETROVERSION OF THE NON-GRAVID UTERUS: ITS CAUSATION AND TREATMENT.

Dr. J. K. Kelly opened the discussion by reading the following paper:—

There is a story told of Norman Macleod when he was a young parish minister. He was making a pastoral round of his flock, and visited one day an old lady who was rather sceptical about the attainments of the young clergyman. Before she could allow him to administer the usual spiritual consolation to her or her household, she insisted that he must "gang ower the fundamentals." Norman, of course, did so to her perfect satisfaction.

As in theology, so in gynæcology, it is a good thing occasionally to "gang ower the fundamentals," and to-night I have ventured to take up a trite and familiar subject, with a view to see where this Society stands with regard to it, and whether we are at all unanimous as to its nature, its causation, and its management.

Retroversion should be regarded simply as a dislocation, and not as a disease. Diseased conditions naturally result from the dislocation, just as they arise as the result of a dislocation of a bone at a joint, but they form in themselves no part of the retroversion. The essential fact in the dislocation is that the anterior surface of the uterus is exposed to the intra-abdominal pressure instead of the posterior surface, as in the normal condition. There is no real distinction between retroversion and retroflexion—retroflexion is simply

¹ Dr. Hubert Peters, *Ueber die Einbettung des menschlichen Eies und das früheste bishin bekannte menschliche Placentationsstadium*, 1899.

the flexion of a retroverted uterus. In both the relation to the intra-abdominal pressure is the same. This relation to the intra-abdominal pressure being the decisive characteristic of retroversion, the problem of etiology is resolved into the question as to how the uterus can be dislocated so as to present its anterior surface to the intra-abdominal pressure. We may define the normal position of the uterus as that in which the cervix is nearer the posterior wall of the pelvis than the fundus. So long as the cervix maintains this situation the uterus must remain in anteversion. On the other hand, whenever the fundus lies nearer the posterior pelvic wall than the cervix, the uterus must be in retroversion. The cause of retroversion, therefore, is to be sought in the conditions which bring the fundus behind the plane of the cervix. These conditions are naturally the reverse of those normal conditions that keep the cervix behind the fundus. What are those normal conditions?

We are all familiar with great mobility of the uterus, but there is one portion which is relatively fixed. This portion is the supravaginal cervix, which is fixed laterally by the bases of the broad ligaments, anteriorly by the attachment to the bladder, and posteriorly by the sacro-uterine ligaments. Round this fixed portion we may regard the uterus as swinging freely, the portio vaginalis passing backwards as the fundus passes forwards, and forwards as the fundus passes backwards. In healthy conditions the fundus passes backwards always when the bladder fills, and forwards as the bladder empties, so that it is in constant backward and forward movement, while the supravaginal cervix remains comparatively motionless. Now, if the bladder is greatly distended, the fundus may be carried backwards so far as to be behind the cervix, and therefore in position of retroversion, but as the strain upon the round ligaments keeps the uterus in apposition to the bladder, the intra-abdominal pressure continues to be exerted on its posterior surface, and no actual retroversion occurs. But, in a few cases, retroversion arises when in this condition of distended bladder a fall or blow of some kind causes a sudden overstrain either of the round ligaments, permitting the fundus to pass backwards, or of the sacro-uterine ligaments, permitting the cervix to pass forwards.

Cases of sudden origin of retroversion, however, are much rarer than the cases which arise as the result of habitual over-distension of bladder and habitual over-filling of the rectum. These conditions are common in women who are

engaged in shops and warehouses, where the lavatory arrangements are insufficient and inconvenient; while, at the same time, as in girls who work at sewing machines, there may be long continued and considerable exertion involving great increase of the intra-abdominal pressure. This over-distension of bladder and rectum gradually overcomes the tone of the round and sacro-uterine ligaments, and there comes a time when the cervix slips too far forward and the fundus too far backwards, so that the anterior surface of the uterus becomes exposed to the intra-abdominal pressure, and retroversion is assured. The great majority of the cases of retroversion in nulliparæ, in my opinion, arise in some such way as this, but in women who have borne children retroversion is frequently a secondary result of lacerated or relaxed perineum. In all cases, we might say with justice that retroversion is the first stage of prolapse, but in these cases we express the fact better by saying that retroversion is an incident in the process of descent. It is not itself the first stage. The perineum being defective, the structures forming the anterior segment of the pelvic floor descend to fill up the gap, but the same forces which cause their descent continue in undiminished or even in increased degree to cause their protrusion through the gap, and their descent is facilitated by the relaxed condition of the uterine supports so common in these cases. As the descent takes place the segment swings round its attachment under the arch of the pubis, and first the anterior vaginal wall and then the portio vaginalis uteri present at the vulva. At a certain stage in this descent the uterus assumes the position of retroversion, but while this position facilitates the further descent of the pelvic segment, it is in itself, as I have said, simply an incident in the process of descent.

Retroversion, then, we may classify as primary and secondary, according as it occurs independently of descent of the anterior pelvic segment, or is simply an incident in that descent. Primary retroversion, however, is not uncommonly the first step in the descent of the uterus—the first stage of a prolapse—the retroverted uterus naturally tending to move downwards along the inclined plane presented by the vaginal lumen under the action of the intra-abdominal pressure. That it does not always do so is due to various complications that arise in connection with it, and give rise to adhesions which fix it in the pelvis and prevent its further descent. Adhesions of the same kind may arise in secondary retroversion, and we have thus a natural classification of retroversion into

four kinds—mobile and fixed primary, and mobile and fixed secondary retroversion. I do not think it profitable to proceed farther than this in classification. Various degrees of retroversion have been suggested, but quite independently of the absence of a proper basis of measurement, one may say that retroversion, when imobile, is constantly varying in degree, and when fixed may be fixed at any level, and, we may add, to any degree from absolute fixation to almost free mobility. There is thus endless variety, not only in mobile, but in fixed retroversion, and there is a corresponding necessity for variety in the management of the condition.

With regard to fixed retroversion, the question arises as to the relation of the adhesions to the dislocation. It has been held by some (Küstner) that adhesions resulting from inflammation of tubes or ovaries, or both, are the primary fact in many of these cases, and that the retroversion is brought about by the cicatricial contractions following on the inflammation. I think this must be a very exceptional cause of retroversion. There are, indeed, many cases of retroversion combined with inflammation of the appendages, but in the frequency with which both retroversion and salpingitis occur, this is only to be expected, and there are many cases of inflammation of the adnexa—many cases even of the most chronic forms which, on this theory, one would expect to give rise to such cicatricial conditions as have been mentioned—in which the uterus remains in the normal position and posture. There is, no doubt, on the other hand, that retroversion in many cases gives rise to adhesions, and this in several ways. In the first place, by its constantly lying in contact with the adjacent parts, the posterior surface of the uterus comes to form adhesions with them. Küstner has expressed this excellently in his article on Retroversion in Veit's *Handbuch*. "To understand the occurrence of these adhesions," he says, "we must remember that retroversion, implying as it does a position of absolute repose, contrasts with the normal position in which the uterus, like all the organs of the abdomen, and of serous cavities in general, is subject to constant change of position and attitude, brought about by the varying fullness of the neighbouring hollow organs, the bladder and rectum, by the action of gravity, and by the muscular action of the mesometrium. Now, there is a law that so soon as an organ lies motionless in a serous cavity, the parts of the visceral and parietal serous surfaces that lie in permanent contact very soon suffer a pressure necrosis of their endothelium, and come to adhere with each other. Of this

law we make the most extensive use in abdominal surgery ; I may mention merely ventro-fixation of the uterus, Lembert's intestinal suture, and operations for inguinal and umbilical hernias. For the same reason that these operations succeed, the retroflected uterus must become adherent to the peritoneum of the posterior pelvic wall. The same thing must occur with regard to the tubes and ovaries which are immobilised by the retroversion." In this way, then, we may say that retroversion directly leads to adhesions.

Indirectly, also, by leading to a salpingitis, the retroversion brings on adhesions. The retroverted uterus almost necessarily suffers from endometritis. For this there are many favouring conditions ; the frequently gaping os, the situation of the os in the lower part of the vagina where virulent microbes are abundant, the low nutritive condition of the uterine wall arising from the impaired circulation, are all conditions that facilitate the occurrence of endometritis, and with an endometritis there is always the risk of an extension of the inflammation into the tubes. But with the establishment of a salpingitis a local peritonitis is usually set up, and adhesions from this cause may spread all over the posterior half of the pelvis.

These considerations are sufficient to show that retroversion leads to adhesions far more commonly than adhesions can lead to retroversion. And with regard to adhesions, we may make one more reflection before we leave their consideration. Although fixation is a further step in the history of the dislocation—a diseased condition, we may say, added to the dislocation—it is, so far as the dislocation is concerned, a conservative process. It prevents the retroversion from going on to prolapse, which is the natural termination.

With regard to the management of retroversion, it is impossible, in the space of time we have at our command, to refer to all the proposals that have been made, and the methods that have been tried. I shall confine myself to giving the results of my own experience, and stating the principles that have been gradually established in my own mind in the course of years. In general, we must draw a broad line of distinction between mobile and fixed retroversion—the treatment which is suitable for the one is not sufficient for the other.

Taking, then, the cases of mobile retroversion—that is, cases in which the uterus can be restored by manipulation to a perfectly normal position—I think that, in the great majority of cases, the wearing of a pessary to keep the uterus in

position is sufficient, and the proper pessary to use is an Albert Smith. These cases I curette for the accompanying endometritis before reducing, so that the uterus, restored to normal position, may not be hindered in its progress to recovery by taking with it a loaded endometrium.

There are, however, exceptional cases in which the pessary does not retain the uterus in position. So far as my experience goes, these are either cases of extremely flexible uterus or cases of shortened anterior vaginal wall, such as we meet with in some women, probably as a congenital condition; or cases in which the perineum is deficient and the tendency to prolapse decided. In such cases some operation for fixing the fundus forward is the only effective treatment. Should we recommend such an operation for these cases? There will, no doubt, be division of opinion on this point.

But, regarding retroversion as I do, as a distinct step in the direction of salpingitis, and keeping in view all the dangers of that condition, I think an early operation is preferable to waiting for the development of distressing and, perhaps, dangerous symptoms, and none of the operations recommended involve great risk. On a few occasions I tried vagino-fixation, but I have not operated in this way for some years, chiefly because of the serious cases of dystocia reported as following from it. I have also done the Alexander Adams' operation several times, but as it practically involves the making of two openings into the peritoneum instead of one, it is in that respect inferior to the usual median abdominal section, and I have known of hernia following it even among the few cases I myself have done. I have come to prefer the fixation of the fundus to the anterior abdominal wall. It is a simple and easy operation, and without any more danger than attends abdominal section at all times, and that is very little if ordinary aseptic precautions are taken. The adhesions which result hold the fundus forward, and allow the intra-abdominal pressure to act in the normal direction upon the posterior uterine surface, while they permit the fundus to withdraw from the abdominal wall and assume nearly its normal site behind the pubis.

In cases of fixed retroversion it is sometimes possible, under chloroform, to tear through the adhesions and reduce the uterus into normal position. Such cases are, in this way, brought into the category of mobile retroversion, and can usually be treated satisfactorily by a pessary. It is, I think, insufficiently recognised in practice that a pessary should only be used after the uterus has been restored to its position. There are a few cases of fixed retroversion where the use of a

pessary counteracts, to a certain degree, the tendency to descent, and the patient will feel relieved by wearing it, but it is a mere delusion to think that a pessary can gradually correct a retroversion. In the majority of cases a pessary will do harm rather than good. The only remedy for these cases is an operation. Here there is no choice but to open into the peritoneum and peel off the adhesions that tie down the uterus, but the modes in which the uterus is retained in the normal situation, after the separation of the adhesions, are very numerous. My own practice in these cases is to do ventro-fixation—two or three sutures uniting the fundus to the peritoneum of the anterior abdominal wall. The operation is a safe and easy one in itself, but many of these cases are complicated with salpingitis, and frequently the operation involves the removal of the tubes and ovaries at the same time.

I have said nothing of the symptomatology of retroversion, mainly because, in the diagnosis of the condition, we must depend entirely upon the physical signs.

The feeling of bearing-down, and even of prolapse, which is complained of, naturally arises from the position assumed by the uterus. But the dysmenorrhœa, menorrhagia, the bladder troubles, the rectal symptoms, the general nervous symptoms, and many other complaints, both local and general, are all so variable, not only in degree, but even in their presence and absence, that it is always very doubtful how far they are to be attributed to the retroversion, and how far to coincident or sequent affections. While this is the case, however, I am sure that it is a mistake to regard a retroversion in itself as of little consequence. Whether the connection be easy or difficult to trace, there is no doubt that retroversion is the starting-point of many painful, and even dangerous, pelvic conditions; and in this view, the advice to leave untreated all retroversions which are only accidentally discovered is one that should be neglected. The proper advice, rather, is to allow no uterus, however healthy, to remain in retroversion.

REVIEWS.

Diseases of the Anus and Rectum. By D. H. GOODSALL, F.R.C.S., and W. ERNEST MILES, F.R.C.S. London: Longmans, Green & Co. 1900.

THE volume before us constitutes Part I of a treatise on the diseases of the terminal portion of the bowel, to be published in two parts, and deals with general diagnosis, abscess, fistula, and hæmorrhoids. A very good account of the anatomy of the parts forms the first chapter. The important subject of abscess and fistula has 130 pages devoted to it, and this, on the whole, is very well done, though we feel that the authors might have condensed their information considerably without sacrificing any of the points to which they wished to draw special attention. There is a useful account of the subject of hæmorrhoids, though we do not find anything new in it; in describing the operative treatment, however, the authors confine themselves to the ligature. This we consider a mistake. They are quite justified in giving prominence to the method they consider the best. But many surgeons employ the clamp and cautery with excellent results, and we are quite certain that some cases are best treated by Whitehead's method, but in neither instance is the procedure described—it is only mentioned to be condemned.

The book is well printed and well illustrated on the whole, though some of the illustrations are not just immediately obvious.

Difficult Labour: A Guide to its Management, for Students and Practitioners. By G. ERNEST HERMAN, M.B. Lond. With 165 Illustrations. New and Revised Edition. London: Cassell & Co., Limited. 1901.

IN his preface to this edition the author says that "the most important alterations are those made necessary by recent improvements in the technique of Cæsarean section and symphysiotomy." He has certainly made alterations in his descriptions of these two important operations, but we cannot look upon these alterations as improvements. In his first edition he advised tying and cutting the Fallopian tubes where it was decided to sterilise a Cæsarean patient. In this edition

he has omitted this, and advises removal of the body of the uterus. He says that, "except for child-bearing the uterus is useless; it is liable to disease, and it menstruates, which is a monthly illness." We are not prepared to admit that the uterus has no other function than child-bearing. It is rather curious that in his chapter on treatment of rupture of the uterus he makes no mention of its removal except by Porro's operation when the rupture is in the body. It is difficult to understand why a ruptured uterus should be stitched up and left while a perfectly normal one should be removed.

If removal of the uterus adds to the safety of the operation, by all means remove it, but we maintain that it should not be removed merely in order to sterilise the patient.

In his first edition he described the ordinary open method of doing symphysiotomy. In the present edition he has entirely omitted this description and substituted a description of a subcutaneous method. If he had added the subcutaneous method to his former description we think he would have made an improvement, but as it stands, the old chapter is decidedly the better of the two.

We had pleasure in recommending the first edition, and in spite of the so-called improvements in this edition we commend it to the attention of all who have difficult midwifery cases to deal with.

A Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D. Third Edition. London: W. B. Saunders. 1900.

WE have very great pleasure in welcoming this, the third, edition of Garrigues' *Text-book of the Diseases of Women*. The two previous editions were most favourably received at the time of their appearance, and we feel sure this one will also receive a similar treatment. If we have any fault to find with the work in general, it is that there is sometimes too great detail in the second division and too little in the first.

For the sake of those who have not seen any review of the first two editions, we would mention the following points regarding the book. The author has divided it into two divisions, a "general" and a "special." In the general division there is first given a very complete description of the anatomy of the female pelvic organs. This extends to a seventh part of the whole work, and is, we think, a little too detailed. There then follow twelve pages on the physiology

of these organs. Five pages are considered sufficient for "etiology in general." This part, we think, might be greatly improved upon, for, while the most general causes of the diseases of the female pelvic organs are referred to, this is done in a casual manner, and without any proper attempt being made to relegate to each its relative importance. The two parts dealing with "examination in general" and "treatment in general" are very complete. The last two parts in the general division, however, viz., those on abnormal menstruation, menorrhagia and leucorrhœa, &c., we have found a little disappointing. These are parts which, we think, the author should have taken more trouble over, as they deal with disturbances so often met with in general practice. Turning now to the "special division," we find the book most satisfactory and complete. It is thoroughly up to date. We think, however, that it is very unfortunate that "ectopic pregnancy" has not been considered, for, although theoretically it is a disease belonging to the domain of the obstetrician, in actual practice it comes quite as often under the notice of the gynecologist.

The work is well printed and illustrated, and will be found by the general practitioner, we feel sure, a most satisfactory book of reference.

Leçons de Physiologie Expérimentale. Par RAPHAËL DUBOIS, avec la Collaboration de EDMOND COUVREUR. Paris: Georges Carré et C. Naud, Editeurs. 1900.

THESE lessons are a *résumé* of the course of experimental physiology given to students of the Faculty of Science in the University of Lyons, and have been published to save them the trouble of taking notes during experimental demonstrations, and to enable them to devote all their attention to what they see and do. They meet the requirements for the advanced certificate of physiology, and while, in the existing state of the laws in regard to vivisection in this country, it is impossible for every student to perform all the experiments described, or even to see them performed, it can be readily understood what a valuable training the course must be alike in cultivating the critical faculty, in eliciting new facts, and in educating the hand and eye of the surgeon.

The first seventy pages deal with the graphic method—methods of registering movements and time, and the general technique of dealing with animals; the second part, of about

three hundred pages, expounds the general properties of nerves, nerve centres, muscles, and secretions.

In connection with modes of registration, special reference should be made to Dubois' universal registering apparatus, a *multum in parvo*. Its cylinder, worked by a small electric motor, rotates with velocities varying at pleasure from forty-two turns per minute to one turn in three days, in a vertical or horizontal plane, and fixed in one place or moved by a screw. It can be started or stopped almost instantaneously without touching the motor; and the cylinder is large, so that many traces may be taken on it. There is a convenient metallic operating table, electric light, electric cautery, a mechanism for artificial respiration, and beneath all a set of drawers for instruments, &c. The authors then proceed to describe the preparation of animals for operation; various forms of operating tables, gags, methods of fixation of animals, rules of anæsthesia, instruments, and avoidance of sepsis. As to the latter, it is wisely urged that in every case the most rigorous care should be taken, and most minute directions are given. Passing to the properties of nerves and nerve centres, various forms of stimuli, electrodes, 'keys, rheocords, and induction coils are described; the use of the galvanometer and electrometer; and, in detail, the investigation of the conducting and reflex action of the spinal cord and cerebral centres. Next come the properties of muscle and of motor end plates. For the genesis of tetanus a new and convenient tetano-motor is described. The movements of respiration in various types of animals, the influence of the nervous system on respiration, and the chemical changes in the air of respiration are now demonstrated; the apparatus and methods for the smaller animals are specially ingenious, but no reference is made to the chamber used for the larger animals and man. In regard to circulation, the cardiograph of Laulanie should be noticed. Ludwig's kymograph is described, and an excellent arrangement for blood-pressure, with special hints for avoidance of interference by blood-clot; Marey's metallic manometer is referred to, but Fick's spring-kymograph is not mentioned.

The action of the nervous system on the circulation and the movements of the isolated heart are discussed. Three lessons on blood are given; its microscopical appearance, enumeration of corpuscles, coagulation, colouring matters, and gases. Henocque's hæmatoscope and Malassez' hæmochromometer are useful instruments. The digestive ferments and their action, and the formation of salivary, gastric, biliary, pancreatic, and intestinal fistulæ are described. Elaborate research is made,

showing that free HCl does not exist in the gastric juice, but in chlorated organic acid.

The last two lessons deal with urine, thermometry, and calorimetry. It will be observed that no study is made of the senses, nor of the action of other ductless glands. Every lesson is very fully illustrated, in the artistic manner found so long in French works, and the text is clear and accurate. There is a list of figures and a detailed table of contents.

Altogether the book is a reliable and useful guide to all kinds of experiments on animals, and it can be confidently recommended to anyone engaging in physiological research work.

Eczema, with an Analysis of Eight Thousand Cases of the Disease. By L. DUNCAN BULKLEY, A.M., M.D. New York and London: G. P. Putnam's Sons. 1901.

THE author of *Syphilis in the Innocent* fully maintains his reputation in this admirable little monograph. The work is really a development of a much earlier essay, and is now published as the third edition of "*Eczema and its Management*, entirely rewritten." After some general considerations, the writer proceeds to the definition of eczema, and then to its frequency, his statistics being based on eight thousand cases. Then the nature and etiology of the disease are considered, great emphasis being laid upon the constitutional factor, and the importance of internal medication. The succeeding chapters treat of the lesions, morbid anatomy, forms, diagnosis, prognosis, and constitutional and local treatment of eczema. Several later chapters are occupied with an account of the disease as it affects infants, and as it affects the various regions of the body of the adult. The fourteenth chapter treats of diet and hygiene, and the fifteenth and last of therapeutics, including formulæ. The volume concludes with an index.

Matter and letterpress are alike excellent.

Modern Natural Theology. By FREDERICK JAMES GANT, F.R.C.S. London: Elliot Stock. 1901.

IN this work the laws of evolution are concisely investigated, and the adaptations of form and structure of organic life for definite purposes are philosophically surveyed. The author

traces the progressive development and continuity of type in specialised forms of organisation, in the ascending scale of creation, as the working of designing Intelligence. Not the least interesting pages are those in which the writer deals with the functions of the human hand.

The book is written in a clear, terse style, and is as free from technical terms as possible.

A pure, earnest, elevating tone pervades this admirable little work, which we regard as a valuable contribution to Christianity.

On Paralysis Agitans, with an Account of the Clinical Features of Other Forms of Tremor. With Ten Illustrations.

By R. T. WILLIAMSON, M.D.Lond., F.R.C.P. Manchester: Sherratt & Hughes. 1901.

WE can always rely upon Dr. Williamson for accuracy in his scientific writings, but, unfortunately, he is not yet able to throw much new light on the nature of paralysis agitans. The morbid anatomy of the disease is still undetermined, and its pathology is a matter of speculation. By way of palliative treatment, Dr. Williamson recommends as most useful the hydrobromate of hyoscine given by the mouth in chloroform water.

Part of the present essay has grown out of two papers previously published, and the whole now appears as a very readable little work.

The Asphyxial Factor in Anæsthesia. By H. BELLAMY GARDNER, M.R.C.S. London: Baillière, Tindall & Cox, 1901.

A SHORT paper on the above subject, drawing attention to some points of great importance, which too often do not receive the recognition they deserve until they become alarmingly obtrusive. Some practical hints on the administration of nitrous oxide, ether, and chloroform are added as additional chapters.

Transactions of the Society of Anæsthetists. Vol. III. London: The Medical Publishing Co., Limited. 1900.

THE *Transactions* contain an interesting paper by Dr. Savage on the relationship between anæsthetics and insanity, a report of a discussion on the after-effects of ether on the

respiratory passages, the idea of most of the speakers being that the dangers have been much magnified. A discussion on the "Choice of Anæsthetics for Young Children" is interesting, chiefly from the extreme diversity of opinion among the members as to which really is the best anæsthetic for these small patients.

Transactions of the American Dermatological Association at its Twenty-fourth Annual Meeting held in Washington, May, 1900. Chicago: P. F. Pettibone & Co. 1901.

THIS volume contains much that deserves the attention of the dermatologist, but we shall here only indicate the titles of some of the articles. These include papers on Bullous dermatitis, Loss of hair, Othæmatoma in syphilis, Leprosy, Parasitic skin diseases, Persistent exfoliation of the lips, Malignant diseases of the skin, Endothelioma and angiosarcoma, Syphilitic lesions of the wheal type, Xanthoma diabeticorum disappearing under antidiabetic treatment, Protozoic dermatitis, and Blastomycetic dermatitis. The statistical table includes a total of over thirty-one thousand cases.

Catalogue of the Pathological Museum of the Glasgow Royal Infirmary. Edited by CHARLES WORKMAN, M.D., and JOHN M'INTYRE. Fourth Edition. Glasgow: Alex. Macdougall. 1901.

IN the earlier days of the Glasgow Royal Infirmary, the importance of pathology and morbid anatomy as the necessary basis of correct theory and practice in connection with the healing art was the open secret revealed to the few, but scarcely known to the profession at large, and not officially recognised by the schools in this country. Hence we can understand how all four editions of this catalogue have appeared within the last thirty years, or in considerably less than a third of the period during which the Infirmary has existed. The first edition, by the late Professor Joseph Coats, appeared in 1872; the second, by the late Dr. David Foulis, in 1878; the third, by Dr. Newman, in 1889; and now the fourth, by new editors, twelve years later. The Royal Infirmary collection has accumulated very greatly in recent years, and is far in excess of the accommodation provided for it. The

erection of a new pathological department awaits the reconstruction of the infirmary itself.

In this edition, the preparations are arranged, as usual, in series; the latter are indicated by Roman numerals. The divisions of each series are marked by capital letters, and the individual specimens are in turn shown by Arabic numerals. At whatever page of the text the book is opened, all three data can be at once recognised, so that the facilities for reference are excellent.

The volume extends to 535 pages, and contains an immense amount of interesting and instructive matter, admirably arranged. The clinical summaries are a valuable part of the account of many of the preparations, and to the diligent student, whether qualified or unqualified, a careful study of the pathological museum, by the aid of this catalogue, ought to prove one of the most beneficial courses of instruction he could possibly undertake. The letterpress is of the same high quality as the editorial part of the work.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

BY DR. R. S. STEWART.

Travel in the Treatment of Mental Disorders. By Savage (*Journal of Mental Science*, April, 1901).—Dr. Savage is strongly of opinion that this mode of treatment has been carried too far. The reasons for its adoption are four—the getting rid of a troublesome patient; the avoidance of certification; the alleviation of bodily disease which, insanity apart, would be benefited; and, lastly, for the treatment of mental disorder pure and simple. The number of patients who come under the last is, in his opinion, very small. Persons suffering from true melancholia do not, in his experience, benefit from voyages, such cases calling for rest rather than stimulation, while the attendant dangers are greatly increased. The same applies to the adolescent insanities, in which touring results not in improvement but in a further weakening of mind or morals. Though in some cases of simple monomania or harmless obsession travel does no harm, and in partial dementia resulting from physical causes, such as fever, good may follow if the stirring up is left alone, still in excited or maniacal patients and in delusional cases only ill effects result. A strong protest is made against the sending away of patients who present distinct bodily and mental symptoms of general paralysis.

General Electrification in Mental Diseases. By Jones (*Journal of Mental Science*, April, 1901).—The usefulness of this method of treatment consists in its power of stimulating tissue change and promoting nutrition, and it

is for this reason that it is strongly recommended in cases where impaired or failing nutrition is associated with failure of mental powers.

Localisation of Mental Functions in the Brain. By Hollander (*Journal of Mental Science*, April, 1901).—In this, the first of a series of papers, this writer sums up his conclusions as follows:—

1. The size of the brain is not a measure of the strength of intellect, sentiments and propensities taken together.

2. The sensory areas are not the areas of intellectual perception and reflection, and the occipital lobes are not concerned with the higher intellectual processes.

3. The motor and sensory centres alone would be insufficient to explain the diversity of human character and the varieties of mental derangement; they are the substrata of mental centres, and therefore psycho-motor and psycho-sensory centres.

4. The frontal lobes alone are an index to a person's intellect, and their mass has to be judged by all the measurements which are used for the estimation of the size of the body; the head may be small in a person of wisdom, provided the frontal lobes are relatively the most prominent.

5. Memory is not a single faculty, but there are centres in the brain for the individual memories, number, place, tune, &c., besides the memory of words, which is already located.

6. There must be centres for the fundamental emotions and propensities in the cortex separate from the centres for purely intellectual processes.

7. The intellectual faculties control and elevate the sentiments and propensities, and thus the anterior lobes are the centres of inhibition of the rest of the brain.

Post-Influenzal Insanity. By Rorie (*Journal of Mental Science*, April, 1901).—From the observation of sixty-eight cases occurring in the Cumberland and Westmoreland Asylum in which there was a history of the occurrence of influenza prior to the onset of mental symptoms, this writer concludes that this variety of insanity may follow at any time after the attack, and that it arises usually in persons with a predisposition towards insanity, either by hereditary predisposition, alcoholic excess, or previous attacks, though the latter is not common. There is no time of life when there is any markedly greater tendency towards its occurrence. The form of insanity is, in the majority of cases, melancholia, often suicidal, and all varieties of melancholia are met with. Acute mania and mania occur, but are less frequent, and general paralysis may follow. A common feature in both the melancholia and mania is the state of mental confusion and stupidity suggestive of auto-intoxication.

Morbid Changes in Dementia. By Bolton (*Journal of Mental Science*, April, 1901).—From the investigation of 121 cases of insanity grouped according to the amount of dementia present at death, it is concluded that the thickness of the cortical pyramidal layer of nerve-cells varies with the degree of amnesia or of dementia existing in the patients, and that the microscopic morbid changes occurring in insanity depend on the amount of dementia alone, and are independent of the length of time during which the insanity has existed.

Arterial Pressure in Atrophic Myopathy. By Marie (*Archives de Neurologie*, June, 1901).—In all amyotrophies there exists a very considerable and constant diminution of the intravascular pressure, without the slightest cardiac alteration. This depression, which is found neither in syringomyelia nor in the other medullary affections, must be due to a trouble of innervation of the heart of sympathetic origin. In two cases of Thomsen's disease, on the contrary, arterial hypertension was found, but the writer is not prepared to affirm that this is constant in this affection.

Vital Acts in the Absence of the Brain in an Infant. By Vaschide and Vurpas (*Le Progrès Médical*, 30th March, 1901).—This is the case of an anencephalous child born ten months after conception, and which lived 39 hours. The cerebellum and hemispheres were totally wanting, the brain being represented by the medulla and pons, the cerebellar peduncles and the arciform fibres of the pons being also absent. The principal phenomena observed were lowering of the temperature, which, in the rectum, was 82.4° F., respiration of Cheyne-Stokes type, tachycardia, cyanosis of the surface, and spasmodic manifestations. General sensibility, it is contended, was intact, as evidenced by movements of withdrawal on pinching or tickling the skin; but sounds, light, flavours, and odours were seemingly not perceived. Twenty hours after birth attacks of Jacksonian epilepsy occurred, beginning in the left arm, soon becoming generalised, and ending with emission of urine. Death took place in the midst of dyspnoea and phenomena of suffocation.

SURGERY.

By G. H. EDINGTON, M.D.

Treatment of Tuberculous Glands of the Neck with Minimal Scarring.—The disease is a local implantation, entrance being gained through the tonsil, and the treatment advocated is intended to attack the local condition, avoiding the unsightly scarring which results from a cutting operation.

The germs resist any agents or influences transmissible through intact skin, e.g., percutaneous cataphoresis. The author, therefore, attacks the diseased glands by "cataphoric diffusion among them of nascent oxychloride of mercury, developed in their midst by the electrolysis of metallic mercury held in contact with a small gold electrode." A small opening is made through the skin and into the gland, and into this opening is thrust a "sliver of amalgamated zinc." This is the anode of a weak galvanic current (1—3 m.a.) which is turned on gradually, and maintained for a few minutes. The tract thus cauterised is kept patulous by impregnation of mixed oxychlorides of Zn. and Hg. The zinc electrode being withdrawn, an insulated gold electrode, with amalgamated point, is introduced, 2—10 m.a. of current turned on and maintained for ten minutes.

The process is repeated at intervals of two or three days. The products of dead bacilli and deposited chemicals drain through the sinus. The germicidal action apparently extends to the next gland in the lymphatic chain.

The final result is the destruction of the tubercle bacilli, without necessarily destroying all the gland-tissue not already destroyed by the disease. The resulting scar is a mere point.—(G. Betton Massey in the *Proceedings of Philadelphia County Medical Society*, March, 1901.)

Subcutaneous Rupture of Biceps.—Following on four cases in Von Bruns' clinique, O. Loos has brought together the statistical material on rupture occurring in the belly as well as in the tendon of the biceps. According to the conclusions drawn therefrom, it would seem that the common cause of the rupture is a stretching of the contracted muscle by the action of a strong force on the long lever formed by the fore-arm.

The solution of continuity affects exclusively the long head, and mostly at passage of the tendon into muscle; ruptures of the muscle alone are rarer, and ruptures within the tendon are only very seldom met with.

The aim of treatment is to favour the absorption of the effused blood, and the approximation of the ends of the muscle so as to obviate atrophy. Union by operation may also be considered. *Prognosis* is guided by the seat and

extent of the rupture. Of fourteen ruptures of the muscular belly of the long head, eight were followed by little functional implication; of ten ruptures at the seat of transition of tendon to muscle, only two showed considerable disturbance as a result. Two cases of tendon-rupture showed, on the contrary, very great disturbance.—(Original paper in Bruns' *Beiträge*, abstract in *Centralblatt für Chirurgie*, 1901, No. 13.)

Multiple Skin-Myomata.—The condition is very rare. Marschalkó describes the case of a patient, aged 20. The tumours appeared with much itching. They were localised in one leg, both thighs, and in sternal region. They were very sensitive to touch, and patient also suffered, as is often observed, extraordinarily severe spasms of pain twice or thrice daily; the spasms lasted some minutes.

Histological examination showed nothing new, but the observer believed that he had traced the origin of the tumours to the muscular fibres of the *arrectores pilorum*.

No recurrence had been observed after excision.—(Marschalkó, *Monatshefte für prakt. Dermatologie*, Bd. xxxi, No. 7, abstracted in *Centralblatt für Chirurgie*, 1901, No. 18.)

Osseous Heteroplasty in the Closure of Defects in Skull.—Büdinger demonstrated the calvarium of a boy in whom he had, four years before death, implanted discs from the calcaneum of an old woman, in order to close the defects left by a tuberculous pachymeningitis.

In both places in question, hardly anything abnormal was to be recognised from the inner aspect of the skull. Even the branches of the middle meningeal artery had made a bed for themselves as usual. Externally were two shallow, dish-like depressions, in the deeper, middle portions of which the bone was thinned to about half its proper dimensions. The peripheral portions were equally thick with the rest of the skull, but somewhat irregular. A third small defect, which had purposely not been filled in by a bone-plate, appeared before death firmly filled in by bone. It was seen, however, after maceration, that while the gap had been diminished by about half by bone, the remaining portion was filled by a firm mass of fibrous tissue.

(The demonstration was given before the Medical Society of Vienna, in October, 1900, was published in the *Wiener Klin. Wochenschrift*, 1900, No. 46, and abstracted in the *Centralblatt für Chirurgie*, 1901, No. 19.)

Appliance for Use in Cutting Windows in Plaster of Paris.

—The appliance designed by Dr. Langemak, of Rostock, is designed to aid the surgeon in cutting a window in plaster of Paris applications, by marking accurately the seat of the desired opening. If no marker is used the window is generally cut too large, and this impairs the rigidity of the plaster case.

A cork disc, with or without a needle or nail projecting externally, has been used as a marker; the cork, however, does not adapt itself to the uneven surface of bones and joints, and the surgeon's hand is apt to suffer by contact with the projecting nail or needle.

Langemak's device consists of a disc of copper, 3·5 cm. in diameter and of the thickness of a sixpenny-piece. In the disc are four slits extending from the margin to 3 mm. from a central opening. Into this opening is fitted a conical pin, made of brass, and measuring 3 cm. in length. The division of the disc into segments, by the slits, enables it to be adapted to any irregularity in the surface to which it has to be applied; the conical pin does not scratch the surgeon's hand; and the apparatus, being made of metal, can be readily sterilised and applied to the wound direct, without the intervention of any dressing.

For use, it is held on the wound till one or two turns of bandage are taken to fix it, after which it needs no further attention. The bandages readily pass on either side of the central pin.—(*Centralblatt für Chirurgie*, 1901, No. 20.)

Deficiency of Trapezius as a Cause of Congenital Upward-Displacement (Hochstand) of the Scapula.—W. Kausch communicates the above from Mikulicz's clinique in Breslau.

During the last year three cases of this displacement came into the clinique; in all of these, careful examination showed a deficiency of the lower segment of the trapezius. The cases otherwise resembled fully those described under the above name, and were, till the discovery of the muscle-defect, looked on as typical examples of Sprengl's deformity. Kausch has seen, in addition, two analogous cases outside the clinique; but he is not permitted to give particulars of these.

There were no reasons for looking on the trapezius-defect as secondary, or as an accidental condition.

He considers that the downward-dragging influence of the lower third of the trapezius or the scapula renders it easy to bring the muscle-deficiency into an etiological connection with the displacement of the bone.

It is possible that, in a proportion of the published cases, the lower part of the trapezius has been affected. Accurate investigations into the integrity of this part of the muscle are very seldom made, and one cannot help thinking that a partial defect may be overlooked when not specially examined for, especially when complete integrity is not easily determined.

Details of the cases will be published later. The present note is intended only to draw attention to the condition of the muscle with regard to the etiology of the deformity.—(*Centralblatt für Chirurgie*, 1901, No. 22.)

Trichosis Lumbalis, associated with Spina Bifida Occulta.—*Spina bifida* is found in many cases of *trichosis lumbalis*, and the condition was first described by Virchow. Kellner, of Hamburg-Eppendorf, now publishes a case of which the following is a summary:—

Boy, aged 14, an idiot, presented over the fourth and fifth lumbar vertebrae and upper part of sacrum a very well-developed tuft of hair. The circumference of the tuft at its base was 45 cm.; diameter, 13 cm.; and length, 30 cm. The skin of the hairy part was normal, neither thickened nor tender on pressure. The hair was pale and fine, was equally distributed throughout, and there was no recognisable vertebral arrangement. The tuft was present at birth, and grew in a fashion similar to that on the child's head, so that it required frequent clipping. By external examination, *spina bifida* could not be determined, but the Roentgen rays showed a complete cleft in arch of fifth, and a probable cleft in under part of the arch of the fourth lumbar vertebra. The paper is illustrated by two photographs and a skiagram.—(*Centralblatt für Chirurgie*, 1901, No. 22.)

Congenital Partial Deficiency and Malposition of Large Intestine combined with Acquired Stenosis.—This condition was discovered by Reinbach when performing laparotomy on a man, aged 35 years, suffering from stenosis of the gut. The detailed account of the case is given in Bruns' *Beiträge*, Bd. xxx, Hft. 1. The appendix, cæcum, and ascending colon were not to be found. The much dilated small intestine passed into the large gut at a point to inner side of gall-bladder region. From here the large gut coursed as transverse, and then as descending colon downwards on the left side of the abdomen, ran upwards again to the right as far as the gall-bladder region, bent there sharply downwards, and so passed from the right to the pelvis. Between the two limbs of this last segment of bowel—to be considered as the sigmoid flexure placed on the right side—there were stretched-out cicatricial bands, encroaching also on the parietal peritoneum. The lumen of the intestine was in all probability narrowed in the ileo-colic region, and perhaps still further at the apex of the (sigmoid) flexure. A cure was obtained after anastomosis between ileum and descending limb of the flexure.—(*Centralblatt für Chirurgie*, 1901, No. 23.)

Perihepatic and Pleural Complications of Appendicitis.—L. Lapeyre, of Tours, writes a lengthy article on the above in the *Revue de*

Chirurgie. In addition to his own experiences, he deals with the literature on the subject, and formulates the following conclusions :—

A. Pathology.—1. There are two varieties of pleurisy due to appendicitis—(a) Of pyæmic origin by embolic infarction, and indifferently left or right-sided ; (b) by extension, always right-sided.

2. Pleurisies by extension (*par propagation*) are most often purulent, but one may observe serous or even chronic dry basal pleurisies.

3. These pleurisies always follow a subphrenic abscess. Subphrenic or subhepatic abscess may exist alone (*isolé*). The pleurisy is the ultimate complication by perforation of the diaphragm, or by extension through lymph channels.

4. The path of extension is always by the peritoneum—along the right parieto-colic sinus. The first, retro-cæcal abscess may be at a distance from the appendix, but from this first focus there is uninterrupted continuity up to the diaphragm.

5. The parietal lymphatics play only an accessory part in the extension ; they guide the intraperitoneal collection along the parietes and the inferior surface of the diaphragm.

6. The appendix may be of the ascending type, or applied along the postero-external surface of the cæcum.

B. Symptomatology.—The complication bears no relation to the intensity of the appendicitis. Often at the end of forty-eight hours a peritoneal infection, almost generalised, supervenes. The hepatophrenic phase is always preceded by symptoms of inflammation in right iliac fossa, with gradual invasion of the entire right side of the abdomen from the fossa up to the hypochondrium. This invasion is accompanied by general *malaise*. Then from fourth to eighth day is constituted the *hepatophrenic phase* (Dieulafoy) ; general symptoms are accentuated ; *pain* worst in right hypochondrium and almost always radiating to right shoulder, aggravated by respiratory movements ; dyspnoea ; stitch and troublesome cough, indicating inflammation of diaphragm.

As occasional symptoms, hiccough, sometimes persistent, and icterus may be present.

Physical signs vary with subphrenic or subhepatic situation of the abscess.

(a) *Subhepatic.*—Sometimes œdema of abdominal wall ; enlargement of subcutaneous veins ; deep swelling below false ribs may be observed, and sometimes even fluctuation. Dulness is continuous with that of the liver, which appears increased in volume.

(b) *Subphrenic.*—œdema not generally present, and fluctuation impossible to determine.

Percussion and auscultation give signs very similar to those of purulent pleurisy.

Pleural phase—indistinguishable from the preceding—and the advent of pleurisy cannot be definitely ascertained. Aggravation of general symptoms, and of cough and dyspnoea will point to it.

Prognosis very grave—condition generally terminates fatally from fifteenth to thirtieth day.

Diagnosis between subphrenic abscess and empyema is very difficult. The absence of friction and of ægophony would point to the former. This difficulty is not of great importance, as the pleurisy is only a complication of the subphrenic abscess.

Treatment.—The only really efficacious treatment of subphrenic abscess is *preventive*, i.e., removal of the appendix at the first sign of the infective process, say within the first forty-eight hours.

Treatment of abscess.—If pleura not apparently involved, vertical incision along external border of right rectus. This allows of examination of subhepatic region. If empyema is presumably existent, then transplural operation, with resection of ribs, is recommended : in this way the two collections of pus—pleural and subphrenic—are evacuated by single operation.—(*Rev. de Chir.*, April and May, 1901.)

Books, Pamphlets, &c., Received.

- Lectures on the History of Physiology during the Sixteenth, Seventeenth, and Eighteenth Centuries**, by Sir M. Foster, K.C.B., M.P. Cambridge: The University Press. 1901. (9s.)
- Atlas of the Nervous System, including an Epitome of the Anatomy, Pathology, and Treatment**, by Dr. Christfried Jakob, with a Preface by Professor v. Strumpell; Edited by Edward D. Fisher, M.D. 112 Coloured Plates and 139 Illustrations. London: W. B. Saunders & Co. 1901. (15s. net.)
- Anatomical Atlas of Obstetrics, with special reference to Diagnosis and Treatment**, by Dr. Oskar Schaeffer; Edited by J. Clifton Edgar, A.M., M.D. With 122 Figures on 56 Lithographic Plates, and 38 other Illustrations. London: W. B. Saunders & Co. 1901. (13s. net.)
- Atlas and Epitome of Labor and Operative Obstetrics**, by Dr. Oskar Schaeffer; Edited by J. Clifton Edgar, A.M., M.D. With 14 Lithographic Plates in Colours, and 139 other Illustrations. London: W. B. Saunders & Co. 1901. (9s. net.)
- A Text-Book of the Practice of Medicine**, by Dr. Hermann Eichhorst; Edited by Augustus A. Eshner, M.D. With 84 Illustrations. In Two Vols. London: W. B. Saunders & Co. 1901.
- Botany. Part I. Catechism Series.** Edinburgh: E. & S. Livingstone.
- Zoology. Part II. Catechism Series. Vertebrata.** Edinburgh: E. & S. Livingstone.
- Chemistry and Physics, a Manual for Students and Practitioners**, by Walton Martin, Ph.B., M.D., and William H. Rockwell, Jr., M.D. Illustrated with 137 Engravings. London: Henry Kimpton. 1901. (7s. 6d. net.)
- Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing, and Medical Latin, a Manual for Students and Practitioners**, by William Schleif, Ph.G., M.D. London: Henry Kimpton. 1901. (7s. 6d. net.)
- Histology and Pathology, a Manual for Students and Practitioners**, by John Benjamin Nichols, M.D., and Frank Palmer Vale, M.D. Illustrated with 213 Engravings. London: Henry Kimpton. 1901. (7s. 6d. net.)
- Gynecology, a Manual for Students and Practitioners**, by Montgomery A. Crockett, M.D. Illustrated with 107 Engravings. London: Henry Kimpton. 1901. (7s. 6d. net.)
- A Manual of Hygiene and Sanitation**, by Seneca Egbert, A.M., M.D. Second Edition, enlarged and thoroughly revised. Illustrated with 77 Engravings. London: Henry Kimpton. 1901. (10s. 6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 22ND JUNE, 1901.**

	WEEK ENDING			
	June 1.	June 8.	June 15.	June 22.
Mean temperature, . . .	59·2°	60·3°	53·5°	59·3°
Mean range of temperature between day and night, .	14·7°	13·1°	13·9°	7·1°
Number of days on which rain fell, ...	6	5	4	3
Amount of rainfall, . ins.	1·59	0·32	0·48	0·98
Deaths registered, . . .	281	315	262	292
Death-rates, ...	19·1	21·4	17·8	19·9
Zymotic death-rates, . .	3·9	4·0	2·6	3·8
Pulmonary death-rates, .	4·3	5·2	5·4	4·9
DEATHS—				
Under 1 year, ...	64	66	57	57
60 years and upwards, .	50	55	40	62
DEATHS FROM—				
Small-pox, ...	1	1	...	1
Measles, ...	12	13	9	15
Scarlet fever, ...	1	1	1	5
Diphtheria, ...	2	4	...	1
Whooping-cough, . . .	22	25	16	24
Fever, ...	3	4	3	2
Diarrhœa, ...	16	11	9	8
Croup and laryngitis, .	1	...	...	...
Bronchitis, pneumonia, and pleurisy, ...	41	48	59	45
CASES REPORTED—				
Small-pox, ...	3	2	4	2
Diphtheria and membranous croup, ...	8	9	10	5
Erysipelas, ...	20	16	21	21
Scarlet fever, ...	49	52	53	61
Typhus fever, ...	4	...	...	1
Enteric fever, ...	10	15	15	10
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	1	...	1	...
Measles,*	208	308	310	321

* Measles is not notifiable.

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ORIGINAL ARTICLES.

THREE AND A HALF YEARS' EXPERIENCE OF
FARADISATION OF THE HEAD, ON SCIENTIFIC
PRINCIPLES, IN THE TREATMENT OF CHRONIC
INSOMNIA AND ASSOCIATED NEUROSES, COM-
PRISING A SERIES OF FORTY-SIX CASES.¹

By SAMUEL SLOAN, M.D.,

Consulting Physician, Glasgow Maternity Hospital; Consulting Physician,
Glasgow Samaritan Hospital for Diseases of Women.

By the profession in general the electric treatment of internal disease or disorder is still looked upon with doubt, even when those who practise it are not looked upon with suspicion. In the latter case this suspicion is not extended to those who, when everything else fails, feel that they must "try electricity," and who, although to the best of their ability, yet do so in a perfunctory, half-hearted, and fitful manner, knowing little of its laws and less of its *modus operandi* in organic disease or in functional disorder.

In such circumstances no record of results is kept, and thus no advance in electro-therapeutics is made. But the advance of this science is no less hindered by the electro-therapeutic

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 15th February, 1901.

enthusiast, who, having made up his mind that electricity, because it has in some cases seemed to produce wonderfully satisfactory results, is therefore able to do anything; his patients frequently assisting him in keeping up this delusion. His zeal, without knowledge, is soon discounted by his medical brethren. By those who believe in his honesty his work is looked upon kindly, but unsympathetically; whilst by those who have previously suspected his honesty it is looked upon with disapproval and contempt.

The fact that much has been written on electric treatment of disease adds, I fear, little to its favourable reception. This result probably, in part, arises from the feeling I have referred to; and so electro-therapeutics has, even in the present day, little chance of being put fairly on its trial. Nor is this to be wondered at, for, unless in cases of muscular wasting, few impartial records have been published which could be said to reduce the treatment to something of the nature of clinical research, and thus render some help towards the advance of electro-therapeutics. To do something in this direction is the object I have had in view in bringing this paper before you to-night. I come with no theories, and have no text-book facts to advance. I simply submit to you notes of my own work in this line during upwards of three years.

I have tried to record honestly what I observed. Some of the work was discouraging, some the reverse. You have it all here. My paper deals with facts. If any of you can shed light, by your remarks, on this work I have undertaken, I shall be most grateful. I am to-night limiting my remarks to the application of electricity to the treatment of insomnia and some associated disorders. This subject is, perhaps, more interesting in the present day. One evidence of this is seen in the numerous so-called infallible and safe remedies being introduced by chemists, and lauded by probably sometimes sincere seekers after truth in our own profession. Faith in the efficacy of these drugs, however, is losing its hold on us, as is evidenced by the advice, more frequently given now, to lead a healthier life so that fewer drugs may be required. Indeed, it has occurred to me as not improbable that the frequent use of these drugs is not only a source of physical danger, but a cause of many a mental breakdown. Warnings are often, however, in vain, for, the insomnia having become chronic, a cerebral habit has been acquired, and the removal of the cause in part, or even in whole, may still leave the sleeplessness a heritage less easily got rid of.

My first experience of sleep arising from the application of

electricity came to me as a surprise. I was unprepared for it. I might have seen something about it in text-books, but, like most of you, if I had I should most likely have been very sceptical as to its frequent efficacy.

I had observed that when applied to other parts of the body the patients sometimes volunteered the remark that it made them sleepy. I thought if this were the case that I might get more benefit from it in this direction by applying it to the head. I certainly could not have got this hint in text-books on electro-therapeutics, so far as concerns the faradic current (that with which I was then and have since been mostly working), for in Althaus' interesting and suggestive book on *Failure of Brain Power* he barely mentions faradisation as a therapeutic measure of any value, confining his attention wholly to the use of the continuous current. Professor Rockwell, again, in referring to the electric treatment of insomnia, speaks of general faradisation and of galvanisation only in the case of the head; nor does Bigelow, in *An International System of Electro-Therapeutics*, mention faradisation of the head as having been even tried for this purpose.

The general impression, even among electro-therapeutists, is that the faradic current is an irritant when applied to the head. Indeed, a well-known London physician, who has devoted a considerable amount of time to the use of this agent in nervous diseases, has informed me that he once used this current to the head of a patient for some purpose, and the result was such that he never attempted it again.

As to whether this should continue to be the view of the profession on this subject I shall leave you to judge after you have studied the record of the forty-six cases I am submitting to you. It is important to state that these include *every case* in which I have used it—at least I have not consciously omitted a single case during the last three and a half years—at first in no way selecting my cases, but of late applying it only where I knew from acquired experience what was likely to be the result, or in desperate cases, as in one of my very latest, where I knew I could be doing no harm, and wondered if it might not be possible that some good might follow. I refer to case No. 45.

I have no time, nor have I inclination, to-night to enter into the question of the condition of the brain or its circulation during normal sleep, nor the change therein during sleeplessness or morbid sleep, or in the conditions I have designated accompanying neuroses. Neither shall I speak of the effects

of drugs on insomnia, except to mention that since the beginning of my treatment of insomnia by the faradic current I have in each case made it a rule that all drugs, even tonics, are to be stopped during the treatment. The only conditions I insist on are that for a few hours after each *séance* all mental excitement, or even mental work, should cease as far as possible; that there should be no physical fatigue for a short time after each application; and that the cause of the symptoms, if known, should be, at least in part, removed, if this is possible. Tobacco and alcohol, except in rare cases, need not be wholly stopped, but no excess should be sanctioned.

In cases where the cause is in acute operation at the time, as in Case No. 20, I may try one or two applications, but this is done, as might be expected, with little hope of success. I have always discouraged patients from talking whilst the current is on, and have kept them sitting quietly in the chair for a few minutes after removing the electrodes from the head.

I have mentioned that in my earliest experiences I met with varying success, and that I am not now recording these cases, limiting myself to the work of the past three and a half years. During that time I have had better means of carrying out this treatment on scientific principles than previously, and have been able to utilise my former experience.

My notes in some of the recorded cases may be considered incomplete. As I did not at the time take them so much with a view to publication, but rather for self-instruction, and as I have no time for detailing every case, you must just take the abstract of these notes as they are here given. I believe they are sufficiently complete to answer the purpose. If further information is desired, it can be obtained.

Since most, if not all, my cases have been, not cases of disease but of disordered cerebral function, and that what was being treated was subjective symptoms, I have thought it best to employ frequently the *ipsissima verba* of the patients as indicating the condition before and after the treatment. In no instance, if at all possible, did I suggest answers to my questions when put. Co-existing disease, of course, modified sometimes materially the result, and so, of course, did the nature of the insomnia as well as its cause. If you study the table you will see that some of the cases were purely "psychic," whilst some were "secondary" insomnia, that is, insomnia due to pain or some physical uneasiness.

A most interesting article dealing with this subject, written by Sir James Sawyer, many of you must have read in the *British Medical Journal* during December last. In this paper

the writer deals very fully with the subject in all its aspects, especially with the treatment; and although almost everything that could be or has been tried for the cure of insomnia is there mentioned, the conclusion come to is far from encouraging to those who have followed on similar lines.

Since in this paper not a single mention is made of the action of electricity as a therapeutic agent in insomnia, I may infer that by the profession in general it is practically unknown, or is considered of so little value as not even to be worth mentioning.

My own experience of it, however, during what must, in the light of my table of cases, be admitted as a very extended trial, has convinced me that it is, in some cases, if not the most valuable remedial agent yet recommended, at least a most important adjunct to other measures, and one which no one should now omit to try when ordinary and easily applied remedies have failed; always, of course, on the understanding that it is used in the manner in which it has been employed in these cases I am bringing before you.

I shall delay giving details as to my method of using this agent till I have laid before you my report as to the results of this treatment. I have arranged these results under five heads:—

1. Cases in which the patient—he or she being judge—has been absolutely cured, or practically cured.
2. Cases in which the improvement has been so great as to make the treatment well worth the trouble.
3. Cases in which improvement, though present, has been slight.
4. Cases in which no appreciable result was obtained.
5. Cases in which some harm was done, though this was of a temporary nature only.

I have omitted a column for the cause of the complaint, for if the insomniac is psychic, it may safely be inferred that, in the case of the female sex, this will arise from one, or from a combination, of the following:—Continuous domestic cares, family trials, the pursuit of pleasure, the shock of bad news, and so on; whilst, as a predisposing cause, there will generally be found to be a neurotic temperament, unless where the immediate cause, as mental shock, has been exceptionally severe. And, again, whether the insomnia has been the cause or the consequence of the general disorder of the health, there will usually be found present malnutrition of some sort, as anæmia or neurasthenia, in mild or in severe form. Tea and coffee are usually not to be considered the prime cause to any

great degree, the craving for these, whether as stimulants or sedatives, being already present, and the tea or coffee simply intensifying the morbid condition. In the case of the male sex, the cause will be—singly or together—business worry, ill-regulated or excessively prolonged and anxious work, financial cares, &c., with often tobacco and alcohol, which, though used in part as a remedy, will add to the morbid state of the brain. In my list of cases, there is no one, so far as I know, of what could be called excessive drinking or excessive smoking as a cause *per se*, that is, of an amount of drinking or smoking which, in otherwise perfect health, would have acted as it undoubtedly did, in the morbid condition of the patient. The influence of other conditions of health on the results is shown in the column for co-existing conditions. The table contains a series of forty-six cases, extending over a period of nearly three and a half years—quite a long enough time for a practitioner in trying a new remedy to have passed from enthusiasm to disappointment, back again to cold criticism, and, finally, to some amount of knowledge based on experience.

The conclusions I have come to I shall give farther on, but now I shall read the summary of the work as drawn up in this table (pp. 88-93).

I have tabulated the results in percentages. The table shows that 45·5 per cent of the cases were cured—absolutely or practically; that 32·5 per cent were sufficiently relieved to have made the treatment an undoubted success; that 11 per cent were so slightly relieved as to make the result not worth the trouble involved; that 9 per cent received no benefit, though they were none the worse of the treatment; that 2 per cent were injured, the resulting distress lasting, however, for only a limited time. If we analyse the figures, we will find that the result in the uncomplicated or psychic cases was almost uniformly gratifying, the exception being Case No. 20; and we shall find that where there was a cause for the continuance of the sleeplessness other than a psychic one, the result is usually unsatisfactory. I shall detail a few of the cases, to indicate certain points of interest.

The first is Case No. 6. This one is illustrative of what I might call a good case, in which the result is surprising and satisfactory both to the patient and to the medical attendant; and, as it was one of my earliest, it was of special interest to me. This lady was in good circumstances, staying with, and in charge of, the household of her bachelor brother, a gentleman who had been eminently successful in business, and

who went much into society. His sister, enjoying also this kind of life, had indulged in it to such an extent as, in a lady of highly strung nervous organisation as she was, to bring about the usual result. When she came to me on 8th November, 1897, she complained of having to lie awake for several hours on account of "the fidgets," and getting only six hours at the most of disturbed sleep by the continuous use of "powders." My instructions were that she was to stop the powders at once, and to lead for a short time a moderately quiet life, and I gave her on that day the faradic current to the head in the usual manner, and directed her to return two days later. When she returned on the 10th, she reported that she had had less of the "fidgets" during the night, and had felt fresher during the day, but that she had no more sleep than before. The current was repeated at that visit. On the 12th she reported that she had been still less fidgety, and that she was getting more sleep. On the 15th the report is—"Slept very well since the 12th, practically no 'fidgets' since the first application of the electricity." On 1st December following, she was sleeping so well as to wish for a whole day in bed. On 4th September, 1900, three years later, she returned saying that up till then she had been sleeping soundly. Her reason for returning was that she felt again "run down in spite of getting plenty of sleep."

The next case (No. 9) illustrates the importance of ignoring the fears of the patient for the current. This patient was seven months pregnant when she called. Her previous pregnancy—the first—had nearly cost her her life, and she dreaded what might be in store for her. Her principal complaint was sleeplessness. Her dread of the current was great. I employed extra precautions to avoid a shock, and after being fully under it her terror passed off, and she exclaimed—"Oh! this is lovely; I could sit here all day." This was on 11th January, 1898. As she resided at a distance from Glasgow, I asked her not to return for about a week. Her report on the 19th was that she was sleeping better, but not very well. On the 26th she reported that she had been sleeping much longer, and she was so well that I said she was to return only if the sleeplessness returned. This improvement continued till a confinement—the third—in February, 1900, a period of two years. Since that date she had been very nervous and irritable. "In the fidgets during the day, and sleepless during the night." I gave her one application of the current to the head, which sufficed to make her "nerves better" again.

FORTY-SIX CASES OF CHRONIC INSOMNIA AND ASSOCIATED

NO. OF CASE.	DATE.	SEX.	AGE ABOUT	COMPLAINT.	CO-EXISTING CONDITIONS (IF ANY).
1	29/9/97	M.	40	Giddiness ; sickness ; sleeplessness.	...
2	12/10/97	F.	34	Mental excitement ; sleeplessness.	...
3	12/10/97	F.	38	Sleeplessness ; nervousness ; sulphonal every night for several years.	Epilepsy.
4	22/10/97	M.	40	Headaches and sleeplessness for 18 months ; average sleep, 4 to 5 hours.	Worry ; tobacco.
5	2/11/97	F.	45	Headaches ; fitful sleep.	Business cares.
6	8/11/97	F.	40	Sleeplessness for 6 months.	Too frequent social functions.
7	6/12/97	F.	40	Sleeplessness.	Domestic anxiety.
8	24/12/97	M.	30	Headaches ; sleeplessness.	Eye trouble, &c.
9	11/1/98	F.	28	Very sleepless and nervous.	Pregnancy.
10	17/1/98	F.	44	Very, very sleepless ; average, 2 to 3 hours.	...
11	4/2/98	F.	33	Sleeplessness and nervousness.	Dyspepsia.
12	8/2/98	M.	45	Giddiness, shakiness, and sleeplessness.	...
13	15/2/98	F.	34	Headaches and nervousness.	Endometritis ; eye-strain.
14	20/2/98	F.	7	Sleeplessness and perpetual restlessness day and night for a long time.	...
15	15/3/98	M.	35	Very nervous and very sleepless ; quite unable for work.	Temporary glycosuria.
16	26/4/98	M.	14	Sleeplessness habitually for past 3 years ; lying awake from 3 to 5 hours ; headaches of late due to shock.	Cardiac disease ; eye-strain.
17	4/5/98	F.	42	Nervous headaches from mental strain.	...

NEUROSES TREATED BY FARADISATION OF THE HEAD.

No. OF APPLICATIONS.	REMARKS.	DATE.	FINAL RESULT.
2	An excellent sleep and less giddiness.	30/9/97	Greatly improved.
1	Much calmer day after.	13/10/97	Slightly improved.
6	Thought it disagreed, but was able soon to sleep without sulphonal.	...	Slightly improved.
6	"Slept fairly well during the treatment; gradually got better after; now sleep soundly all night."	6/2/01	Absolutely or practically cured.
6	"Certainly much better since the treatment."	5/2/01	Greatly improved.
6	Case reported below.	...	Absolutely or practically cured.
?	"Did me a lot of good at the time."	21/1/01	Greatly improved.
10	General condition much better, but improvement less satisfactory since electricity was stopped.	2/9/98	Greatly improved.
3	Case reported below.	...	Absolutely or practically cured.
5	"Not much effect at the time, but natural sleep began to return from beginning of treatment, and this has practically remained ever since."	5/2/01	Absolutely or practically cured.
4	"Sleeping and eating splendidly, and much less nervous. What a difference I feel!"	25/2/98	Absolutely or practically cured.
24	Case detailed below.	...	Absolutely or practically cured.
15	"Very, very well, and very busy." "The electricity did me a lot of good."	11/5/99 5/2/01	Absolutely or practically cured.
3	Report from mother:—"The effect was at first to make the restlessness worse; by and bye restlessness stopped and sleep returned. The child since can sit still, and even stand like a soldier for 20 minutes."	8/9/98	Absolutely or practically cured.
3	Sleeping better, and less nervous.	21/3/98	Greatly improved.
19	"Great benefit from the electricity; rarely troubled with sleeplessness now."	7/2/01	Greatly improved.
8	No headaches, feeling bright and better.	...	Greatly improved.

FORTY-SIX CASES OF CHRONIC INSOMNIA AND ASSOCIATE

NO. OF CASE.	DATE.	SEX.	AGE ABOUT	COMPLAINT.	CO-EXISTING CONDITIONS (IF ANY).
18	23/6/98	F.	64	A nervous fear; sleeplessness.	Severe prolapse of uterus.
19	1/7/98	F.	37	Trouble in the head—a feeling of stupidity; imperfect sleep.	...
20	13/7/98	F.	53	Sleeplessness for 6 weeks; feels as she would go mad.	...
21	19/8/98	F.	63	Giddiness; sleeping badly.	Attack of paresis of right side 2 months ago.
22	9/9/98	F.	37	Sleeplessness; lightness in head and nervousness for a long time.	Astigmatism.
23	12/9/98	M.	40	Cerebral fatigue; some threatenings of fear of suicide.	Influenza?
24	8/11/98	F.	40	Sleeplessness; "fearful dreams" when asleep.	Epilepsy and uterine fibroids.
25	24/11/98	F.	33	Headaches for 8 years; congested feeling at top of head; stimulant helps temporarily; imperfect sleep.	...
26	16/12/98	F.	23	Imperfect sleep; starting out of bed during night; very nervous and restless during the day.	...
27	19/12/98	M.	45	Giddiness; feeling of confusion when adding up figures.	Chronic influenza.
28	11/1/99	F.	39	Sleeplessness; average amount, 4 hours.	...
29	15/2/99	F.	39	Nervousness, giddiness, and sleeplessness.	...
30	20/2/99	M.	40	Nervousness; restlessness; imperfect sleep; brain easily fatigued.	Neurasthenia.

EUROSES TREATED BY FARADISATION OF THE HEAD (*continued*).

NO. OF APPLICATIONS.	REMARKS.	DATE.	FINAL RESULT.
5	"The electricity did a great deal of good in steadying the head; would like, if possible, to have another time of it." Sleeping pretty well.	5/5/99	Greatly improved.
2	Feeling well now; sleeping ever so much better.	6/7/98	Absolutely or practically cured.
1	Cause too acute; lives too far away for treatment.	...	No result.
13	Sleeping better than for 5 years.	22/11/98	Absolutely or practically cured.
5	No giddiness; feeling well; sleeping much better; no headache. The dreadful feeling in the head gone, but cannot yet stand much excitement. Glasses not yet obtained. Improvement has lasted since close of treatment. Not troubled again with sleeplessness.	19/9/98	Absolutely or practically cured.
6	Case detailed below.	...	Absolutely or practically cured.
3	...	...	No result.
3	Brain fatigue less; headache a great deal better; sleeping for 8 hours and more soundly.	15/12/98	Greatly improved.
5	The electricity stopped the startings, and caused deeper and longer sleep. Report by mother.	6/2/01	Absolutely or practically cured.
8	No giddiness for some time; quite clear in adding figures. Patient says now (Feb., 1901)—"The electricity did me no harm." His wife says—"In my opinion, it did him good; I observed that he complained less after the treatment."	3/3/99	Slightly improved.
1	Electricity caused dreadful headaches, lasting 2 or 3 days; was giddy, sick, and wretched, and had a shocking bad night after. "Now sleeping very well indeed."	...	Temporarily injured.
5	Case detailed below.	...	Absolutely or practically cured.
4	"The electricity did me neither good nor harm."	13/2/01	No result.

FORTY-SIX CASES OF CHRONIC INSOMNIA AND ASSOCIATED

NO. OF CASE.	DATE.	SEX.	AGE ABOUT	COMPLAINT.	CO-EXISTING CONDITIONS (IF ANY).
31	8/3/99	F.	49	Insomnia; sleeping only by the use of alcohol; great nervousness.	Influenza.
32	12/6/99	M.	50	Nervousness and confusion of thought; imperfect sleep.	...
33	11/9/99	M.	46	General nervousness.	...
34	19/10/99	F.	37	Nervousness; restlessness; sleeplessness.	Endometritis.
35	12/2/00	F.	21	Sleeplessness; darting pains through head.	Chlorosis.
36	23/5/00	F.	45	Nervous; "head feels thick."	...
37	31/5/00	F.	40	Sleeplessness lasting 5 months.	Mitral disease; pregnancy; confined to bed.
38	2/7/00	F.	30	Sleeplessness and nervousness.	Pregnancy: 8 months.
39	30/7/00	M.	25	Sleeplessness for 3 weeks—about 2 hours per night.	...
40	5/9/00	M.	58	Sleeplessness; nervousness.	"Predominant morbid thoughts"; advised by specialist to have an attendant.
41	7/12/00	F.	29	Insomnia for 3 weeks.	Chronic sickness.
42	11/12/00	M.	48	Insomnia for about 6 months.	Influenza.
43	2/1/01	M.	58	Giddiness; attacks of momentary loss of consciousness.	Middle ear disease.
44	7/1/01	F.	35	Sleeplessness—average, 3 hours nightly.	Multiple neuritis; neurasthenia.
45	8/1/01	M.	31	Nervous since boyhood; creepy feelings in head; sleeplessness; starts out of bed during the night and walks about the room.	Of feeble intellect.
46	14/1/01	F.	65	Sleeplessness for more than a year—average, 4½ hours.	...

NEUROSES TREATED BY FARADISATION OF THE HEAD (*continued*).

NO. OF APPLICATIONS.	REMARKS.	DATE.	FINAL RESULT.
24	Less nervous; sleep improved, but precarious. Has had to travel from Edinburgh for treatment.	31/8/99	Greatly improved.
7	"I was quite cured, although gradually; how much of the cure was attributable to the electricity, I cannot say, but I am satisfied that the applications had a beneficial effect."	6/2/01	Absolutely or practically cured.
3	"Decided comfort" for several days after two applications; pain after third.	4/10/99	Slightly improved.
4	"Slept well since electricity to head."	4/7/00	Absolutely or practically cured.
4	After electricity slept at once on going to bed, and headaches disappeared.	6/2/01	Absolutely or practically cured.
8	Continuing to improve.	5/1/01	Greatly improved.
2	After first application, had a longer sleep than for past 3 months, unless under beer or bromide.	1/6/00	Greatly improved.
4	Sleeping much better.	8/7/00	Greatly improved.
4	Good sleep since treatment.	9/2/01	Absolutely or practically cured.
20	Patient says—"Freer from nervousness generally during last 3 weeks." Friends say no material difference.	7/12/00	Slightly improved.
3	Declined to give further treatment, as patient had twice come for the electricity under the influence of opium.	...	No result.
9	Case detailed below.	21/12/00	Absolutely or practically cured.
3	No return of the symptoms almost at all.	21/1/01	Greatly improved.
8	Case reported below.	...	Absolutely or practically cured.
...	Case detailed below.	...	Greatly improved.
3	Sleeping ever so much better; do not require electricity now. Reported to be still sleeping much better.	18/1/01	Absolutely or practically cured.
		3/2/01	

The next case (No. 12) is interesting in explanation of the frequency of the applications. This gentleman, whom I have known since his boyhood, had been coming to me occasionally for years, usually for two or three visits only at a time, since he tired of visiting me as soon as he became slightly better. I had generally treated him with bromide, antipyrin, nux vomica, arsenic, &c., assuring him there was nothing seriously wrong, and advising him to stop tobacco and alcohol.

I find that in 1890 his complaint was oppression on the top of the head, nervousness, and sleeplessness, with trembling feelings in his hands and feet. These symptoms, he said, were due to worry, but my own impression was that the worry was due to his inability to cope with his ordinary easy work, and that this inability was due to an ill-regulated life in his youth.

When he visited me on 4th February, 1898, I decided to try electricity to the head, as I had been getting good results in similar cases.

By 18th February, when I asked him how he was getting on, he replied, "I am a different man, I can assure you." On 14th March he volunteered the remark, "The electricity is working wonders; I have an excellent mental grip of things now." As this gentleman spent the winter months in town and the summer months in the country, coming into town daily, I advised him at the beginning of April to try how he would get on without the electricity, now that he was to be living in the country.

He returned to me in August, saying that he had felt the electricity so "soothing and strengthening" that he would like if I would allow him to return for more. He continued to return at first once a week, then once a month, till the following March.

In October, 1900, eighteen months later, I saw his wife, and, on enquiring for him, she said, "He is very well, and so much happier; if not, he would certainly be back for more electricity."

The next case I wish to report is No. 23. This was a case of what Althaus calls "encephalasthenia," due, the patient said, to nerve-strain and domestic cares for three years back. He said that existence was a misery to him. When asked as to the extent of the insomnia, he replied that in its present severity it had lasted for three or four months, and that sometimes for two or three days he had never had a moment's sleep. He had been subject to sleeplessness, to a less degree, for ten years. I told him at his first visit that I thought I

could do nothing for him; that he must go off for a long holiday. He said he could not do so, and begged of me to try something. I said, on condition that he did no business for one week, altered his habits, and came to me every two or three days, I would try what electricity to the head might do. Within two weeks his manner indicated such an improvement that I asked him to describe what difference he felt. His reply was, "I think I can best describe my altered condition by saying that I feel that it is good to live now."

At his last visit to me, on 24th October, six weeks from the beginning of the treatment, I told him that I thought it was quite unnecessary now to give him any treatment.

In this case, as in some of the others, I wrote recently enquiring as to some points on which my notes seemed to require supplementing. In this gentleman's reply he says that, in his opinion, the good result was also partly due to the rest, open-air exercise, change of diet, and diminished use of tobacco and alcohol, and that the good effect of the treatment had lasted five or six months, till, indeed, he had again ceased to live a healthy life.

I have noticed that one of the early results of this electric treatment is an increase of self-control, life is made happier, and there is less desire to return to the old habits.

I shall next relate a case showing that it is a mistake to give up the treatment because the patient complains of the bad effect of the current.

Case No. 29. This lady was becoming alarmed about her sleeplessness, which had lasted for eighteen months. At her first visit to me I began faradisation of the head, letting, as usual, all other treatment severely alone. I advised her to return in three or four days for the next application. She failed to do so, and, as I had known her since childhood, I called and enquired why she had not returned. Her answer was—"Oh! no! you have no idea how bad I was after your treatment." I insisted that she should come that afternoon, and bring her husband with her, for more electric treatment, promising to give her a smaller dose this time. She did so, and at the next visit—two days later—she said she was so much better, was "so delighted about the sleeping." She had five applications in all, and has continued till now to sleep, as she puts it, "beautifully."

I am purposely avoiding troubling you with reports of routine cases, desiring that each case reported should emphasise some special point.

The interest of the next case (No. 42) lies in the information

it yielded regarding the importance of avoiding drugs during the electric treatment. This gentleman complained of severe insomnia, which had lasted for six months. He believed that it had arisen from the great heat in London, where he usually spends the summer months, and also from mental worry. He had lately had what seemed to be an attack of influenza.

On account of the influenza, I put him under quinine—9 gr. to 12 gr. daily—and ordered him rest in bed, with cessation from all work. He improved considerably during that week, but at the end of that time, on 11th December last, he told me that the insomnia was just as severe as before, though the causes of the worry and anxiety had passed away, and although bromide and chloral had been tried. On that day I began electric treatment of the head. That night he had "the best sleep for several weeks," namely, seven hours.

The current was repeated daily. The next night he had a splendid "full" sleep. After four daily administrations I told him not to return for three days. When he next called I was surprised to learn that the sleeplessness had returned, and that he was suffering from a throbbing sensation in the head. On enquiring as to any possible cause, I discovered that he was still taking the quinine in full doses, though the necessity for this drug had passed. The quinine was stopped at once, and on the following night the sleep was "splendid," in spite of a new cause of worry that had arisen. I stopped treatment four days later, and there has been no sleeplessness since. In this connection I may simply refer here to Case No. 40. My reason for refusing further treatment in that case was that the lady, when I accused her of it, denied that she was taking opium, though she subsequently confessed it.

The interest attached to the next case (No. 44) is due to the fact that the insomnia was associated with neurasthenia. I had come to the conclusion, from the results in Case No. 30—also a case of neurasthenia—in which I had tried electricity to the head before beginning the Weir Mitchell treatment, that in future there was no use employing it in such cases at all. I accordingly put this lady at once under the usual treatment for neurasthenia. The sleeplessness continuing in spite of the Weir Mitchell treatment, and averaging only about an hour and a half each night, induced me to change my mind at the end of four days.

The night following the first application, which was given at 9:30 P.M., she slept for six hours, the longest sleep she had had, she said, for nine months. She continued to sleep well under daily administrations of the current, unless when

disturbed with abdominal pain due to what might be called gastric neuritis. It will be seen from the table that she was suffering from peripheral neuritis. When I promised that she would soon be getting eight hours sleep per night she said she did not think that this was possible, as she had never in all her life had eight hours sleep in one night. It was a mistake to make this promise, for the longest sleep I was able to bring about in one night was seven hours and forty minutes.

This lady, when spoken to about her sleep, was more impressed with its soundness than with its duration, and with the feeling of freshness she had on waking—a feeling to which she had long been unaccustomed.

Evidently faradisation of the head in neurasthenia, though of no use as a substitute for the Weir Mitchell treatment, may be employed to supplement it with advantage.

The last case I shall detain you with is No. 45. This was a gentleman who had been of weak intellect since childhood. His facial expression was typical of the melancholic. The family physician, four years previously, had advised that he should be put into an asylum.

It seemed at first a case in which it was ridiculous to try electricity. I accordingly advised a plunge bath at night at 96° F. for twenty minutes, 30 gr. bromide at bedtime; and, for the melancholia, 5 gr. thyroid extract twice daily. No result whatever following this, I began electricity to the head as an experiment about a week later. Almost at once he began to improve, although he was at first slow to admit this himself. I told his brother that the electric treatment was merely an experiment, and that, with his consent, I would give it a trial for two weeks. At the end of that time I said to his brother that, although I saw that some improvement was following, I did not feel inclined to put myself to the trouble and him to the expense of a continuance of the treatment. He begged of me to continue it, as he had observed that after each application of the current his brother was always "brighter, saner, and clearer eyed," this condition remaining for several hours, and continuing in a less marked degree for a day or two after. His father, he said, had also noticed this. The treatment has been continued since twice a week. The startings out of bed during the night, which had before the treatment occurred once every night, have, his brother informs me, practically ceased entirely for nearly three weeks; and, whereas it used to be difficult to get him out of bed in the morning, on account of the restless nights he had had, he now sleeps soundly and awakes fresh.

Returning to the tabulated statement of these forty-six cases, what deductions is it justifiable to draw from a study of it? I think I am free to state that there is no remedial measure at present known to the profession, other than a prolonged holiday, which will give such immediate and more or less prolonged benefit.

It might be interesting here to state what, in my experience, has been the more immediate, as well as the various later, effects of the treatment, apart from the mere effects on the insomnia. I have gathered these from the statements of patients whilst under the treatment.

The first effect is a benumbing influence on the parts to which the electrodes are applied—the brow and the nape of the neck. Later on, during the *séance*, patients usually volunteer the remark that it is making them sleepy. On the way home there is exhilaration, described by some as like to the effect of champagne; a feeling as if walking on air; an unnatural buoyancy of spirits; a feeling of comfortable lightness in the head. One gentleman remarked, "I felt as if I had got a new head." This feeling passes off usually in a few hours, and when night comes, if the treatment is having a favourable effect on the insomnia, the patient falls asleep sooner, the sleep is sounder, and there is a feeling of freshness on awaking in the morning. On the following day, and for a longer or shorter time after, according to the progress of the case, there is a quiet, self-possessed feeling; a sensation of being braced up; of having a better mental grip of things, all the sensations, indeed, that ought to be present in a *mens sana cum corpore sano*—a condition of merely dragging on a miserable existence having been exchanged for a habitual sense of well-being. The sensation of unnatural exhilaration as a secondary result of the electricity differs thus from that following champagne in that, whereas the former leaves the patient on the following day with a healthier tone of mind and body, the latter, although giving a feeling of being "in heaven," is apt, in direct proportion to this exhilaration at night, to cause him to feel "in the other place" in the morning.

I have said that I would avoid theorising much, if at all, on the action of electricity on the neuroses we are considering, but I cannot help saying here a few words as to the impression left on my mind on this matter after pretty long and close observation of the effects of this kind of electricity on the brain. The galvanic or continuous current, which I have never employed in these cases, is said to act by producing a

state of electrotonus. That I can understand the meaning of when this current is applied to a muscle or nerve in part of its course. Single induction shocks will also, I understand, do so. In the case of the brain, however, we are dealing with a mass of nerve cells, and it is needless to argue as to what the effect will likely be on the normal electric condition of these cells. It seems to me as if the faradic current acts on the cerebral nerve-cells in a physico-chemical manner. With this current the vibrations of the current interrupter occur about fifty times per second, giving two currents in different directions at each interruption. We have thus in fifteen minutes—the time usually occupied at a sitting—ninety thousand impulses passing through each molecule of the brain substance. These are bound to have a material physico-chemical effect, influencing metabolic processes, and, where productive of good, changing, in a greater or less degree, morbid into normal metabolism. The force of the influence must be capable of gradations from an amount so almost infinitely minute as to leave unaffected the normal vital changes ever going on in the molecules, up to an amount sufficient to interfere seriously with the integrity of the organism. Now, the nerve-cells have, in the cases we are considering, from ill-regulated action, come to lose their capacity for normal restrained action. These electric rhythmic impulses do not make them rest in the sense of producing a sluggish life in them; but give them a period of restful activity, which alone is conducive to organic health, just as the gentle, pleasurable, rhythmic movements of the dance will ease the aching limbs, and as the jaded mind, when removed from the influences of business worry in the city, becomes rejuvenated under the sweet influence of the country; the eye finding a restful and, therefore, pleasurable occupation in beholding a beautiful picture in every changing aspect of nature, as the ear does in an environment where the very stillness is music.

After this brief digression regarding the why, I wish to say a few words as to the how.

I have hinted that my methods are different from those generally employed in the ordinary use of the faradic current; but this does not necessitate any material difficulty in the carrying out of the treatment by anyone who is willing to devote the time necessary, though this time element is one of the principal drawbacks to the practice of electrotherapeutics. One of the main differences in my method of applying the treatment is that my secondary coil is composed of many more turns of fine wire than are those generally employed for clinical purposes, and therefore the current from

it is more sedative than irritating. I take special precautions to have the current entirely under control and very much restrained, especially at the beginning, and to have the patient under it as shown on the faradimeter scale before he or she can possibly be aware of it, employing it throughout only in small doses, and judging of the actual amount given by my faradimeter, which indicates when the current is on and what dose the patient is receiving. This exact dose is capable of being maintained with the greatest nicety, though the patients may, during most of the time, be unable to say whether they are receiving any current at all. As to the question of coils, the one I use is a compound one, and was specially made to my instructions. It is composed of about 8,000 to 9,000 turns, the usual faradic apparatus supplied having coils with, perhaps, sometimes only 2,000 or 3,000 turns. This compound coil has certain conveniences, since, by the change of position of a plug, coils of varying intensity, and therefore of varying therapeutic effect, from sedation to stimulation, can be easily tapped. Formerly, I began the treatment with No. 4—the longest—gradually coming down to No. 2 or even No. 1, as the patient became less in need of sedative action; but I soon found that doses which soothed when the electricity was taken from No. 4 coil, caused quite a different effect when taken from No. 2 coil, which has little more than half the number of windings. Indeed, in one case—No. 16—the effect was so serious as to alarm the boy's mother after leaving my house. Since that time I have confined myself, in the treatment of insomnia, wholly to the use of No. 4 coil. That the same amount of current from coils of different intensities produces different effects I have proved by finding that, whilst one milliamperé¹ of current from No. 4 coil is easily and comfortably borne, *the same quantity* from No. 3 will be a source of discomfort, and from No. 2 of distress. I have tried as an experiment on myself the effect of faradisation of the head when employing one of the ordinary shop coils, finding that, whilst more than one milliamperé of current from my No. 4 coil gave a pleasant sensation, a current even smaller in amount from the other caused such a feeling of distress, general irritability, and anxiety as to compel me either to reduce it or stop it. What the effect would be of a much

¹ By one milliamperé faradic current I mean the electro-magnetic equivalent of an amount of sinusoidal alternating current, the galvanometric measurement of whose sinusoidal galvanic equivalent is one milliamperé. See article on "Faradimeter" by the author in *Transactions Glasgow Philosophical Society*, 1897-98.

smaller amount of current from these small coils I have had no time to try; nor did I care to experiment in this direction on my patients, who came to me for relief and not for experimental purposes. I should say, however, from what experience I have, that it is quite possible—if the dose were sufficiently small, cautiously and gently applied, and carefully measured—the result might be good, though it may safely be assumed that my present plan of treatment is likely to give much better results. The dose I have found suitable varies from one-third milliamperes up to 1 milliamperes, or even, in some very few cases, up to $1\frac{1}{2}$ milliamperes. In order easily to control the current, there should be two rheostats, or current restrainers—one of, say, fifty ohms, easily graded, to control the supply of current to the primary coil; and another, a compound one, with a total of about 10,000 ohms resistance in series with the patient to control the secondary current. The faradimeter is also, of course, in series with the patient. The current to the primary may be obtained from a small accumulator, or from two or three fairly large ordinary cells.

Dr. Rockwell (*Medical and Surgical Electricity*) says that “to apply a mild faradic current to the forehead with the softest sponge and largest possible surface is, for the delicate invalid, often unendurable.” I have found no such difficulty, however—indeed, the very reverse. The electrodes are made of fine copper wire-netting, covered thickly with soft felt. That for the brow is about 15 square inches in size; that for the nape of the neck, about 10 square inches. It is important that these be kept clean, be warm and moist, and be closely and uniformly applied to the parts. This last I do by means of an elastic bandage round the head. The electrode in the brow should be connected with the positive pole; that on the nape of the neck with the negative. All the connections should be securely fixed, since a loose connection may cause, by sudden increase of current, serious alarm to the patient. Everything being in order, the secondary coil with its damping shield is made to slide in part off the primary, the battery plug is inserted, and an amount of current allowed to flow into the primary coil, which has a fixed core, sufficient to give, as indicated to the ear, the greatest frequency of vibrations possible. The secondary coil and the damper are then slowly pushed home, and a rheostat governing the secondary current slowly and gradually moved till an amount of current just susceptible to the patient is reached. The needle of the faradimeter will now show a deflection of fully one-half millimetre, equal to about one-fourth of a milliamperes. The

current is now gradually increased till the maximum is reached—one milliampere or less—according to what the patient can comfortably bear. With new patients I frequently employ less current than they can, at the close of the *séance*, recognise the presence of. At the end of a *séance* of ten to twenty minutes the current is gradually reduced, and, as I said before, the patient is allowed to remain quietly sitting for a few minutes; otherwise alarming, though not dangerous symptoms may follow. When he lives in town or within easy distance, I generally apply the current three times a week for two weeks, or twice a week for three weeks; six applications in ordinary cases proving sufficient. If three applications should fail to effect any improvement, the cause for this must be searched for, and, if possible, removed. Failing the discovery of a cause, or the possibility of its removal, the treatment should be stopped, since no benefit is likely to result from it under the then existing circumstances.

My faradimeter, in its present form, is twice as sensitive as the one shown at the meeting of the Glasgow Philosophical Society, whilst it is less than one-fifth of the size.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

BY DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 28.)

2. *Increased sensitiveness*, or pain on pressure in the renal region, and spontaneous pain in the lumbar region are very common in renal disease.

Painful sensation on pressure in the renal region.—Under normal circumstances moderate pressure upon the kidneys through the abdominal parietes does not produce pain or even discomfort; it may, indeed, be laid down as a principle that when such pressure induces pain there is some alteration in the kidneys. Undue tenderness shows itself in increased muscular resistance to pressure with the hands. In order to

determine increased sensitiveness in the kidney, the patient lying upon his back with the knees well elevated with pillows, the surgeon should pass one hand behind the lumbar region, and with the other hand exert gentle, but firm, pressure in the direction of the kidney. When the muscular resistance is overcome, and the pressure continued, a peculiar, deep, dull, sickening feeling is experienced by the patient, which, as a rule, he can easily distinguish from the superficial aching consequent upon the compression of muscle.

Another method of determining the sensitiveness of the kidney is to give a sharp knock or tap in the lumbar region. In some diseases, most notably in renal calculus, a sharp, stinging pain is thereby produced. The one side should be carefully compared with the other. When present, increased sensitiveness is a useful guide, but its absence has no significance, as in many serious renal lesions pressure does not produce suffering.

3. *Spontaneous pain* in the lumbar region or in other well recognised areas is a very common complaint in kidney disease, but its character and situation vary according to circumstances, and may often guide the surgeon in forming an opinion as to the nature of the lesion giving rise to the suffering. The feeling may only amount to a sense of uneasiness or discomfort, it may be a dull or gnawing pain, it may be very acute at times or may reach to a degree to be described as lacerating torture, accompanied by agonising spasms. The suffering may be of short duration, with intervals of complete freedom from pain, or it may be persistent. The less severe pains, as a rule, continue steadily in their course and are located in one place, while the more acute pains are generally remittent, and extend over considerable and constantly varying areas. Dull persistent pain in most cases indicates a slow, steady change in the condition and bulk of the renal parenchyma, or in the size of the pelvis, as is seen in tuberculous nephritis and in tumours; on the other hand, acute suffering is due to lesions which suddenly interfere with the exit of urine from the pelvis, for example, in calculus, in tuberculous pyelitis, or ureteritis, or in obstruction from the impaction of a blood clot. When the pain is acute it is not always referred to the seat of the disease, but may cause spasm of the bladder, pain in the testicle, at the point of the penis, in the hip-joint, down the thighs, or the suffering may be limited to the kidney on the opposite side to the one that is the seat of the disease.

This reno-renal reflex pain is not commonly met with. Morris, in his recently published book on *Surgical Diseases of the Kidney and Ureter* (vol. ii, p. 84), says—

“It is important to know that a stone in one kidney will sometimes excite sympathetic pain and irritation in the other; but this transferred or sympathetic pain is of an aching character, not of a spasmodic or colicky description, is only occasional, and never occurs except as an accompaniment of more severe pain on the affected side.

“So far as my own experience and researches go, there is not a single case which affords satisfactory evidence of symptoms on one side only being caused by a stone in the kidney of the other side. The presence of a stone in the painless kidney is not proof that the painful opposite organ is not also affected. That the attacks on the painful side have ceased after removing a calculus from the painless kidney is not conclusive; this may be nothing more than a coincidence, due either to the accidental shifting of a calculus in the painful kidney, or to the calculus becoming lodged in some immovable manner. There may be very advanced disease of the kidney on the painful side, and a symptomless calculus in the opposite kidney. In a case which has been under my care of late there was a sarcomatous growth in the right kidney with hæmaturia, but an entire absence of pain and tumour on the right side, throughout the whole course of the disease; yet intense pain was experienced in the left renal region radiating over the left side only. The inference would have been that this was a typical case of reno-renal reflex pain had not symptoms during the last few weeks of life and a *post-mortem* examination shown that the left-sided pain was due to a similar new growth involving the left transverse processes and the left side of the bodies of the lower dorsal vertebræ. I consider the doctrine of reno-renal reflex with an absence of pain in the affected kidney as unproved and unsound, and if acted upon in practice likely to lead to very serious and dangerous results, as I have endeavoured to show in my ‘Hunterian Lectures.’”

On the other hand, the experience of the writer has convinced him that reno-renal reflex pain is a fact which must be accepted, and the following cases, especially Mr. Maylard's, prove it¹:—

¹ The record of these cases was in type before the writer had an opportunity of seeing Mr. Morris' work.

CASE X.—*Repeated attacks of renal colic limited to the left side, accompanied by hæmaturia from the right ureter only.*

W. I., æt. 58, consulted me on the 25th May, 1899, with a history of dull pains in the left lumbar region during the last seven years, and of acute attacks of renal colic at intervals of from two to three months. These attacks were usually brought on by active exercise or by driving, and were accompanied or succeeded by hæmaturia, which usually lasted for some days after the pain passed away. The patient was sent into the "Central Home" for examination during one of these attacks, and, on exploration with the cystoscope, blood was seen to flow from the *right ureter only*. This was observed on several occasions. I therefore advised exploration of the right kidney, but the patient was so convinced that the disease was on the left side that he would not consent to an operation being done.

Mr. A. E. Maylard has kindly given me the following account of a somewhat similar case which came under his observation:—

"D. M., aged 38, had complained for six months of a 'nagging' sort of pain in the right iliac region, which seemed to him to pass upwards and lodge in his right lumbar region, where it produced a dull sickening sensation. It would linger there for twenty-four hours, causing him during the time to vomit, and making him at the end of the attack feel very weak. He had four bad attacks of acute iliac and lumbar pain. Immediately after one of these attacks the urine was found to contain a quantity of albumen, red blood cells, but no tubercasts. In the course of a few days the urine returned to the normal. Frequency of micturition was never a symptom.

"Believing the case to be one of renal or ureteral calculus on the right side, the right kidney was explored, and a ureteral catheter passed from the pelvis of the kidney. Nothing was, however, detected. The patient had complete suppression of urine after the operation, which continued till his death on the fourth day.

"The kidneys, examined after death, showed the right one—previously explored by operation—to be healthy, and the left to contain a calculus, about the size of a pea, in one of the upper calyces.—(6th March, 1901.)"

A very interesting case is reported by Mr. Edmund Owen (*British Medical Journal*, 8th June, 1901, p. 1385), in which

the pain was limited to the right side. The right kidney was explored with a negative result, and at a subsequent operation a large phosphatic calculus (400 grains) was removed from the left kidney. Commenting upon the case, the author remarks—"I am well aware that it is not a very unusual occurrence for a surgeon to operate upon the wrong kidney in his search for a stone; but I do not think that a more conspicuous instance than this, of the untrustworthiness of the subjective symptom of *pain* in renal calculus, is likely to be forthcoming. Subjective signs are proverbially untrustworthy through the whole range of surgery; but in the case of the kidneys, which have drawn their nerves blindfold from the epigastric pool, it is small wonder if, in the absence of objective signs, patient and surgeon are sometimes led by them to make mistakes."

Very often the patient is able to distinguish more than one kind of pain—a dull, gnawing, local pain, which is persistent, and a sharp, spasmodic, remittent pain.

The diseases of the kidney in which pain is a prominent symptom embrace all lesions which involve acute inflammation of the renal parenchyma or the pelvis, or those in which there is a condition causing sudden interference with the circulation of blood or an impediment to the escape of urine.

Renal pain may be said to be due to one of the following causes:—

1. Obstruction to the exit of the urine from the pelvis.
2. The presence of a foreign body, a tumour, or an inflammatory lesion in the pelvis.
3. Sudden increase in the tension of the kidney, either by an increase in the blood pressure or by the formation of new material in the renal parenchyma leading to increase in bulk of the organ and distension of the capsule.
4. Traction upon the nerves by displacement of the kidney, by increase in its bulk, or by pressure upon the nerves in its vicinity.

We may now consider how far pain in the region of the kidney may assist us in forming a diagnosis. It is not possible to classify surgical affections of the kidney according to the presence or absence of pain, for the greatest variation in this respect may be observed in the same disease in different individuals, or, again, a lesion which at one stage gives rise to little or no suffering may at a later period cause considerable pain. It may be generally stated, however, that in diseases where the increase in bulk of the organ is slow, or the

distension of the pelvis is very gradual, the lesion is not characterised by much suffering, for example, in simple chronic hydronephrosis, in polycystic kidney, and in tuberculous nephritis without pyelitis. In cases of a calculus impacted in the substance of the kidney, little pain may be referred to the organ, whereas such diseases as pyonephrosis, suppurative nephritis, perinephritic abscess, tuberculous pyelitis, and calculus in the pelvis or in the ureter, usually give rise to considerable pain.

Paroxysmal pain coming on for longer or shorter periods, with intervals of complete relief, is generally caused by some obstructive lesion, calculous obstruction, torsion of the ureters, obstruction by pus, tuberculous *débris*, hydatid cysts, or blood-clot, or from spasm of the ureters. It may also be caused by the poisons of rheumatism or of gout, or by some of the malarial poisons.

On the other hand, persistent pain of renal origin is most likely to result from some inflammatory affection of the pelvis and ureter, the presence of an impacted stone, the existence of malignant disease or of a tuberculous lesion. Sometimes, also, persistent pain may be induced by the irritation of highly acid urine.

In hydronephrosis, as a rule, severe pain is only induced when the obstruction of the ureter is sudden and complete or nearly so, or as a consequence of pressure of the distended kidney on the neighbouring structures. In the majority of cases of chronic hydronephrosis recorded, the patient suffers more from a sense of weight and dragging than from actual pain; but as this form of hydronephrosis is frequently associated with other painful affections, such as cancer of the uterus or bladder, prolapse of pelvic organs, or impacted calculus, an amount of suffering may be attributed to the distension of the renal pelvis for which it should not be blamed.

The amount of pain does not, however, depend upon size of the hydronephrosis, but rather upon the circumstance whether the obstruction leading to it is acute or chronic in its nature.

Sudden pain coming on in a case of chronic hydronephrosis, in which the patient has been free from suffering for a considerable time, and especially if the onset of the pain is preceded by a strain, blow, or other injury, should suggest rupture of the hydronephrotic sac into the peritoneal cavity.

In cystic degeneration pain is undoubtedly rare, unless suppuration, or some other complication, has set in.

In simple cases of polycystic kidney, the patient may complain of dull aching in the renal region, sometimes of a sickening character. Usually there is only a sense of general discomfort as a consequence of the size and weight of the kidney, but there may be exacerbations resembling renal colic if the cystic kidney has become movable. These attacks are due to transitory hydronephrosis rather than the cystic degeneration. In many cases there is much tenderness on pressure.

In pyelitis pain, except of a dull, dragging kind, may remain absent for a considerable time. It is usually limited to the lumbar region, and is increased on pressure, but not by movement.

Suppurative disease of the renal pelvis depends upon the circumstance of free escape into the bladder. Should this be intercepted temporarily, the increased intrarenal tension may cause severe paroxysms of renal colic. Pressure over the kidney may provoke much pain, and palpation by abdominal, rectal, or vaginal examination may reveal thickening of the walls of the ureter. If there is a large collection of pus in the pelvis of the kidney, and especially should the suppuration be induced by the presence of a calculus, rupture may take place into the abdomen or behind the peritoneum.

In perinephritic abscess the pain is severe and lacerating from the beginning, and increases steadily; there is great tenderness on pressure, associated with local elevation of temperature and rigors, preceding the appearance of swelling and fluctuation in the lumbar region.

It is usually located in the loin, but may extend along the distribution of the nerves of the lumbar plexus, and, as a rule, it continues until the pus is evacuated. In chronic cases, the surgeon is apt to be deceived by the absence of pain, and the patient may be deluded into the hope that a good recovery has taken place. The constitutional disturbance, however, remains, and it is only when the pus is freely evacuated that a relief from pain can be looked for.

Tuberculosis of the kidney is not characterised by severe pain, but commonly the patient complains of a dull, dragging sensation in the loins.

Pain in renal tuberculosis depends upon whether or not the pelvis and ureters are involved in the disease; it is seldom severe when the parenchyma only is implicated, and rarely amounts to more than a dull, dragging sensation in the loin. Agonising suffering is sometimes endured, however, in cases of tuberculous pyelitis, and when the disease involves the ureter and bladder. In such instances the pain is associated with

frequent micturition, and comes on in paroxysms like those of nephritic colic, and is often temporarily relieved by a copious flow of urine. Strangury is present in almost all varieties of the disease, but there is seldom an escape of blood with the last drops of urine unless the bladder is involved, and the pain and frequency are almost as marked when the patient is at rest in bed as while moving about. The greatest discomfort is referred to the bladder, which, when it becomes distended, causes considerable suffering before and during micturition, but the pain is relieved immediately the bladder is empty.

The pain associated with *renal calculus* varies according to the situation and composition of the stone, and according as there is, or is not, pyelitis. It may be stated generally that when the calculus is impacted in the substance of the kidney, and uncomplicated by pyelitis, comparatively little pain is suffered, or severe pain may exist for a time and then disappear for years. In other cases there is a dull pain almost constantly present in the loin. If the calculus is in the renal pelvis, or moving freely in a cavity within the kidney, pain becomes a more marked symptom, and is not limited to the loin, but extends to the testicle, to the penis, and the inner aspect of the thigh. When the stone is impacted in the ureter, the action of the psoas muscle in walking may aggravate the pain.

When the calculus is so situated the pain is dependent upon movement, being aggravated by exercise of any kind, or even by movements in bed, while complete rest generally affords marked relief from suffering. The varying pressure of the abdominal viscera, or changes in posture, may modify the pain, or palpation either in the back or of the abdomen may cause it to be temporarily increased. Immediately a stone enters the ureter renal colic sets in, and the paroxysms, coming on often without warning, may last for hours or days. The pain is agonising, and radiates from the region of the kidney down the ureters to the thigh, penis, and testicle. When the first sickness and faintness, so characteristic of renal colic, have passed off, the patient may endeavour to relieve himself by contortions in all directions, or may be thrown into convulsions by the fearful agony he is suffering. After a period of great anguish, usually measured by hours, the pain subsides as suddenly as it came on, and the other symptoms accompanying it disappear. If the calculus passes into the urinary bladder, the patient may be sensible of the fact, but if the stone has merely become displaced from the renal orifice of the ureter, another paroxysm may occur at any time. In other cases the calculus remains impacted in the ureter, which becomes more

or less habituated to its presence; under such circumstances, although the pain may set in suddenly, it becomes only gradually relieved, and cessation of suffering alternates with paroxysmal attacks, probably caused by spasm of the ureter.

In renal calculus the pain is not entirely due to the direct irritation of the stone or to the obstruction produced by its impaction. Another factor must be admitted. The presence of the calculus in most instances induces a congested condition of the renal parenchyma, and this increased vascular tension is of itself the cause of much suffering. The fact is well illustrated by the relief experienced by patients after a free hæmaturia or by a cupping in the lumbar region.

CASE XI.—History of renal calculus for twenty years—Repeated attacks of renal colic, and passage of stones and gravel from both kidneys, frequent hæmaturia and occasional pyuria—Pain often relieved and general condition improved by a profuse hæmaturia—Nephrolithotomy.

A. W. Y., æt. 54, was admitted to the "Central Home" on 3rd December, 1900, on account of an acute attack of calculous pyonephrosis in the left kidney. He was sent to me by Dr. M'Kerrow, of Ayr, and gave me a long and interesting history of his illness, which commenced over twenty years ago. During that long period he had many attacks of renal colic, and not infrequently they were associated with the appearance of pus or blood in the urine. He took a very intelligent interest in his illness, had studied his own case carefully, and observed that when the pain came on, preceded by the usual premonitory symptoms of an attack, which he readily recognised, if he took a long ride on horseback until he was exhausted, a profuse hæmaturia was induced, unaccompanied by the passage of stone or gravel. This gave him much relief from the pain, and for several weeks thereafter his general health improved. A stone weighing half an ounce, and of the form and size of an index-finger, was removed, and the patient made a good recovery.

It must be borne in mind that renal colic may arise from any sudden stoppage of the ureter, by disease of its walls, by a foreign body, by pressure from without, or by torsion. Hence we find that although renal calculus is the most frequent cause of severe paroxysmal pain, this symptom may likewise occur in tuberculous disease from the passage of a caseous mass or a plug of mucous, or as a consequence of a tuberculous ulcer. In hydatid disease severe suffering may

arise from the evacuation of cysts, or in tumours of the kidney from portions of the growth becoming detached and carried down the ureter.

As shown by Prout—and Dickinson agrees in his opinion—the pain is not equally severe in all varieties of renal calculus. The latter says “that of renal concretions lithic acid produces the least pain, what there is being dull, oppressive, and connected with a sense of weight; oxalate of lime causes pain of a more acute kind, and that often referred to a particular spot over the region of the kidney, and sometimes discursive shooting in the direction of the ureter, epigastrium, or shoulder.” Calculi composed of phosphates are “found to be attended by great suffering—almost unremitting, though paroxysmally aggravated.”

Pain such as described must be regarded as one of the most important indications of renal calculus, and may of itself, if sufficiently characteristic and aggravated, justify the surgeon in making an exploratory incision even in the absence of other symptoms.

In *malignant tumours* of the kidney hæmaturia is the most prominent symptom, and is present frequently for a long period before pain is complained of. Hæmaturia is the symptom which most frequently induces the surgeon to make an examination of the loin, but, for the reason that it is unassociated with pain, it is often allowed to go on without a sufficient regard to consequences. The belief that malignant disease is necessarily associated with pain has, unfortunately, got a firm hold of the professional mind as well as that of the public. The absence of pain is therefore regarded as a good omen; but the absence of pain, from a diagnostic point of view, is a great misfortune. The most easily appreciated danger signal is wanting. In the early stage pain is often absent, and sometimes, especially in sarcomata, the whole course of the disease is practically painless. Suspicion is not aroused, and rapid progress takes place before the nature of the malady is even suspected.

*CASE XII.—Unilateral painless renal hæmaturia, continuous at first, afterwards intermittent, during six months—Round-celled sarcoma of left kidney—Nephrectomy—Death from sudden collapse on the fourth day.*¹

The marked features of this case were the entire absence of spontaneous pain and the absence of swelling in either renal

¹ The specimen was shown at a meeting of the Glasgow Medico-Chirurgical Society held on 11th January, 1901.

region. Suffering was experienced only when firm pressure was made over the left kidney. The diagnosis was advanced by a cystoscopic examination, and completed by an exploratory incision.

J. R., aged 22 years, was admitted into the Glasgow Royal Infirmary on 25th December, 1899, complaining of hæmaturia. At the beginning of August, 1899, he, for the first time, observed his urine contained blood. He was attended by Dr. Frew, of Kilmarnock, and was able to resume work in the course of a month, by which time the hæmaturia disappeared. He kept well until eight weeks prior to admission, when he became the subject of a second and similar attack, which differed, however, by the bleedings being intermittent. The urine was always clear from 10 A.M. till 4 P.M., even while he was not in bed. The blood was frequently absent entirely for a day at a time. The stream was always natural in form, was started without difficulty, and never at any time suddenly stopped. He frequently observed the presence of clots, but took no notice of their form; they usually appeared towards the end of micturition, after which the urine was much clearer. He never passed gravel, nor did he observe any gritty sediment; he never suffered from pain over the bladder, or from urethral pain, and was always free from œdema. On admission, he appeared to be fairly well nourished, but anæmic. The heart, lungs, and liver were normal. On palpating over the kidney only the lower margin could be felt, and only when pressure was made did the patient complain of pain. The chest was very deep, and the kidney unusually high up. The urine was a deep red colour; specific gravity, 1025; and beyond blood there were a few epithelial cells, chiefly large round nucleated cells; no crystals and no tube-casts were discovered.

30th December.—By means of the cystoscope, blood was seen to escape from the left ureter only; the bladder was healthy.

On 5th January, 1900, an exploratory incision revealed the presence of round-celled sarcoma, about the size of a hen's egg, occupying the upper part of the kidney. The kidney was very inaccessible, being situated very high up. The kidney was excised along with the tumour.

For the first three days after the operation the patient was remarkably well, but on the fourth day violent sickness set in, followed by sudden collapse, and the patient died on 9th January. A *post-mortem* examination was not permitted, but an examination of the wound showed that there had been no hæmorrhage from the pedicle.

In malignant disease the pain, when present, is most severe in the situation of the affected kidney, but, especially in the later stages of the disease, it may extend to distant parts. In character it is dull and aching, but may be paroxysmally increased, though not by movements of the body as in renal calculus. The suffering of the patient is generally more severe in cirrhus cancer than in acute carcinoma or sarcoma. It is frequently the cause of difficulty in micturating, even although the bladder is free from the disease. The pain presents great differences in its character; it may be at first slight, vague, and not constantly present, at other times it is entirely absent, or it may be severe and prolonged. In not a few instances the sense of discomfort in the lumbar region is the first indication of disease. Gradually, as the tumour increases in bulk, the suffering of the patient becomes more intense and more constantly present. At first dull in character, later it becomes lancinating, and may either arise spontaneously or be provoked by pressure, but it is seldom aggravated by movements of the body. When the tumour has attained considerable dimensions, or has invaded the tissues around so as to involve or compress the nerve trunks; the pain, instead of being limited to the lumbar region or hypogastrium of the affected side, may extend to the chest, across the middle line, or to the hip and lower extremities, which may lead to the disease being mistaken during this stage for sciatica or rheumatism.

Frequently, the production of pain is by no means easily explained, and may be due to reflex influences producing disorders in other organs. A good example of this is the pain observed in cases of movable kidney. On one occasion the pain may be of strictly renal origin, and due to a transitory hydronephrosis, at another time there may be no dilatation of the pelvis of the kidney, but the patient may suffer from intestinal colic and great flatulent distension. The acute pain which is so commonly met with in diseases of the kidney so closely resembles the paroxysmal pain produced by spasmodic contraction of the intestine that the term colic has been applied to it, although quite unconnected with any disease of the alimentary tract. Frequently cases are encountered in which the kidney is the seat of stone, but the pain is not referred to the renal region, and being unaccompanied by nausea, loss of appetite, and vomiting, is very liable to be mistaken for intestinal or other forms of colic.

It would be well, therefore, to consider here the points of distinction between paroxysmal pain in the abdomen due to

the following causes. The conditions most likely to give rise to pain simulating renal colic are—

1. Spasm of the bladder.
2. Uterine colic.
3. Abdominal tumours.
4. In gallstone.
5. In appendicitis.
6. Intestinal derangement.
7. In lesions of the lumbar and dorsal nerves.

1. In *spasm of the bladder* it must be remembered that pain may be experienced in the urinary tract over an area distant from the actual site of the disease; we find that occasionally in impacted calculus in the kidney the pain is referred to the bladder; conversely in diseases of the bladder the suffering may be most intense in the lumbar region. Spasm of the bladder is generally caused by the presence of some irritant, either in the viscus itself or in some other part of the urinary tract. Ulceration or inflammation of the kidney may produce such an intense spasm in the bladder that it leads the patient to concentrate his attention on the latter organ. Generally, however, spasm of the bladder is the result of the presence of a stone blocking the exit and preventing the escape of urine from the viscus; to ulceration, especially of a tuberculous nature, or it may be induced by morbid lesions in adjacent organs such as the uterus or rectum. The pain is interrupted, there is a marked sense of constriction in the lower part of the pelvis, and the irritation may extend to the thighs, to the spine, or upwards towards the kidneys. The bladder may become considerably distended, and as it fills the agony increases. The patient becomes pale, the skin cold and clammy and covered by perspiration; and to distinguish it from the pain produced by renal disease, the patient experiences much difficulty in passing water.

2. *Uterine colic* is mostly complained of at the menstrual period, but is not necessarily limited to it. Associated with sickness, nausea, and vomiting, it is very liable to be mistaken for renal colic; and if, in addition to these symptoms, there is numbness in the lower extremities, at the flexion of the thighs, and retention of urine, the diagnosis is difficult. In the great majority of cases, however, the pain of uterine colic is more severe in the pelvis, it is generally associated with tenderness over one or both ovaries, and there are evidences of deranged menstruation.

3. *Aneurysm* of the *abdominal aorta* and *abdominal tumours* may or may not be accompanied by pain, but when they give rise to much suffering, especially if it is paroxysmal, the condition is liable to be mistaken for renal colic. On the other hand, renal pain may simulate aneurysm. In a large proportion of cases of movable kidney, and of renal calculus in emaciated persons, the aortic impulses are exaggerated, and at once attract attention; and, as the pain and pulsation are often associated together in the mind of the patient, the pain is referred to the area of pulsation, and so an incorrect description is given to the surgeon.

In movable kidney and in fixed displacement of the kidney, the organ may lie in front of the aorta and be carried forward by each impulse.

CASE XIII.—Movable kidney, frequently fixed in front of the abdominal aorta, giving rise to great pain in the back—Patient naturally small, but much emaciated—Marked pulsation communicated to a displaced kidney—Physical signs resembling aortic aneurysm—Nephrorrhaphy—Cure.

Mrs. C., æt. 47, was admitted to the "Sandyford Home" on 4th January, 1898, complaining of severe pain in the front of the abdomen, immediately above the umbilicus, and extending through to the back. The symptoms were of four years' duration, and consisted of the pain above-mentioned, marked dyspepsia, flatulence after taking food, anæmia, and emaciation. The urine throughout was normal. On physical examination the abdominal walls were observed to be very flaccid, and, when the patient was on her back, a distinct pulsating swelling was seen between the ensiform cartilage and the umbilicus. On palpation it was found to be firm, oval in form, and on pressure very tender. The oval body was pushed forward by each pulsation of the aorta, but no excentric pulsation could be made out. Below the swelling the aorta was easily traced with the hand, and seemed to be unusually large. A clear note was obtained on percussion over the swelling, and, on examining the renal regions, the right kidney was found to be absent from its normal position. When the patient lay upon her right side, the swelling slipped slowly into the right lumbar region, but if she quickly resumed the recumbent posture, the right kidney reappeared in front of the aorta. Nephrorrhaphy was performed, when the right kidney was found to be movable; but, while the upper end was very free, the lower was fixed by an old adhesion, which required to be cut before the kidney could be restored to its normal position.

The prolonged history of the case precluded the diagnosis of aneurysm, and, although at first sight the physical conditions were very apt to mislead, the absence of the right kidney from its proper place, and the fact that the swelling over the aorta disappeared when the patient lay on her right side, made the diagnosis of movable kidney clear.

In aneurysm the pain is most severe in the back, but may extend down the sciatic nerve to the legs. As a rule, it is constantly present and dull, with intermittent paroxysmal attacks of severe pain, which generally come on during the night or in the early morning. Beyond these characteristics, there is nothing in the nature of the pain to distinguish it from renal colic—the condition must be recognised by the physical signs.

In *tumours of the abdomen* the character of the pain and its duration depends upon the situation and the nature of the neoplasm, and the organ primarily involved. The attending symptoms vary greatly, but these and the physical signs are generally sufficient to guide the surgeon. The subject is, however, too large to discuss now.

4. The pain of *gall-stones*, when impacted, very closely resembles that observed in renal calculus. It is, however, more marked in the epigastric region, is associated with jaundice, the voiding of gall-stones, and evidence of a deficiency of bile in the stools.

5. In appendicitis the pain at the onset is not very severe, is accompanied by symptoms of acute disorder of the digestive organs, and is associated with swelling in the right iliac fossa, to which area the pain is at first limited; whereas in renal colic the pain is most severe in the lumbar region, and downwards to the middle of Poupart's ligament.

6. In the severe pain and colic of *perforation* of the *bowel*, of *hernia*, or of *intussusception*, the extreme and sudden prostration, the disposition of the patient to remain resting in a flaccid position with the knees flexed, the history of obstinate constipation, retraction of the abdominal walls at the onset, followed by steadily increasing abdominal distension, make the diagnosis easy. The physical signs and the nature of the pulse are generally characteristic.

7. Neuralgia of the dorsal and lumbar nerves gives rise to

pain in many respects resembling renal colic, and, indeed, a renal affection may be the immediate cause of the nerve irritation. When due to a perineuritis, spots painful to the touch may be found along the course of the nerves or their branches. These are generally a little to one side of the first or second lumbar vertebræ or about the middle of the crest of the ilium. The attacks of neuralgia are of frequent occurrence, and are unassociated with renal disturbance.

(*To be continued.*)

CASES IN CLINICAL SURGERY.

By DUNCAN MACARTNEY, M.A., M.D.,

Surgeon to the Glasgow Cancer Hospital; Assistant Surgeon to the Glasgow Western Infirmary.

CASE I.—*Case of undeveloped colon.*

George G. was admitted to Ward XXII (Dr. Beatson's) of the Western Infirmary on 11th April, 1901. The child was 2 days old. It was noticed that up to time of admission no fæces had passed. On examination, a probe being inserted in the anus, it was found that a *cul-de-sac* existed for about an inch above the anus, which, externally, was perfectly formed. The abdomen was soft, there was no sign of obstruction, neither distension nor vomiting.

11th April.—This afternoon Dr. Macartney, who is acting for Dr. Beatson, operated. He dissected up from the anus in the middle line, towards coccyx and sacrum, till he came to the pelvic fascia, which was pierced with a director. This wound, being enlarged, laid open the pelvic cavity, disclosing the intestines. Selecting the portion that looked darkest—owing to the presence of fæces, and, therefore, likely to be the lowest part—and pulling it down, an incision was made, and its contents evacuated. The parts being then carefully cleaned, the edge of the bowel-wound was sutured to the skin-wound at the posterior margin of the anus.

The child began to take nourishment almost as soon as the anæsthesia passed off, and now, three months after operation, is thriving well.

CASE II.—*Meningocele.*

T. J. was admitted to Ward XII on 24th August, 1898,

while Dr. Macartney was on duty for Dr. Patterson. From birth there has been a swelling over the child's neck. This swelling is soft, and easily reducible into the cranial cavity. There is a well-marked deficiency in the occipital bone, extending from the external tuberosity apparently down to the foramen magnum, and while the child cries the swelling bulges to the size of a pigeon's egg.

The mother has had six healthy, normal children, all now living; then a stillborn child at full time; then a child at seven months, with a very large swelling over the back of the head, which child survived only a few hours. The present child is the ninth, and, so far, has been healthy from birth.

Under chloroform, an incision was made over the swelling, and a pulsating, translucent membrane exposed. The base of this was, however, too broad for the ligature, and Dr. Macartney at once decided to try what steady cicatricial pressure would do. He cut away a very large, so-called, elliptical portion from the scalp, and brought the margins of the skin together with salmon-gut sutures. The wound healed by first intention.

Dismissed on 10th September, 1898.

20th May, 1901.—Child is well. There is no evidence of meningocele ever having existed.

Laparotomy in tubercular peritonitis.

Within the past two years four cases of tubercular peritonitis have been sent to me for diagnosis and treatment. In each case the operation consisted of a simple median incision through the abdominal wall, examination by hand of the condition of intestine and peritoneum, flushing out the cavity with boracic solution, cleaning out the cavity, and sewing the wound in the wall layer by layer. In each case there was striking improvement, beginning immediately after operation, cessation of pain, steady temperature, increase of weight; and in such as had an abnormal quantity of fluid, there was but slight return. Where fluid was abundant I left in a rubber drainage-tube for a few days.

One of the four patients has since died of phthisis pulmonalis, which she had when first seen. The suffering she was having from her abdominal condition made me give her the benefit of operation.

CASE I.—G. M., a young man, 19 years of age, had for over a year suffered from repeated attacks of colicky pain of a very severe kind, with constipation, and sometimes vomiting. He

had, at the same time, been conscious of losing weight and strength, and having night-sweats. Being unfit for work, he came south from the Highlands to see if anything could be done for his improvement. He was for two months of the summer of 1899 in a medical ward of the Edinburgh Royal Infirmary, where he received appropriate treatment in the way of food and medicines, but with no benefit.

On 1st October, 1899, he was brought to me. His complexion and general appearance were such as one meets with often in the subjects of tubercular disease. At the time of admission he had no pain, but had just recovered from a very severe attack. His temperatures were—in the morning round, 99° F.; in the evening, between 100·8° F. and 102° F. His pulse was between 80 and 96, and very compressible. Sweating was an almost nightly event. The abdomen was to all appearance normal, not distended; but on firm pressure with the palm slight swellings could be detected deep in the abdominal cavity at various places. He was kept in bed for some weeks under observation.

On 6th November he had a severe attack of abdominal pain. His face showed his suffering, and looked just as cases of obstruction of the bowels look. His temperature rose to 102·4° F. After a day's poulticing, and repeated small doses of castor oil and laudanum, the pain gradually passed away.

On 18th November patient was put under chloroform by Dr. Burnside Buchanan. The usual median incision was made through the abdominal wall. With the fingers, and afterwards with the whole hand, the peritoneal cavity was explored. There were several mesenteric glands enlarged, and binding down to them portions of the intestines. It did not seem possible to free the adhesions without damaging bowel, they felt so firm and strong. The cavity was then flushed out with boracic solution, and then thoroughly dried. The wound was sutured in three layers.

From this date onwards his temperature kept steady, except for two days during the second week of his convalescence, when there was a sharp rise to 102° F., with pain, due, doubtless, to his having eaten an orange brought to him surreptitiously by a visitor. Castor oil put him right by the third day.

Since operation he has kept well; he is now free from pain, strong, and has been for a year at work.

The record of his weight is interesting. 13th November, 1899—9 st., 8 lb.; 18th November—operation; 28th December (date of discharge)—10 st., 3 lb.; 12th February, 1900—10 st.,

5 lb.; 10th March—10 st., 8 lb.; 8th April—10 st., 10 lb. The others I omit till the latest: 2nd May, 1901—11 st., 7 lb.

CASE II.—A girl, aged 12, was sent to me in January, 1900, by Dr. John Beveridge, of Hurlford, for confirmation of his diagnosis, and for treatment. She was pale and pinched in the face, of a waxy complexion, with the bluish-white tint of conjunctiva rarely met in the healthy, but often in the subjects of tubercle. Her limbs were much wasted. Her abdomen was very much distended, and had been increasing very markedly of late. On palpation, quite a large solid mass could be felt—movable, but not freely.

On operation, this mass was found to be very enlarged tubercular glands, matting intestines, omentum, and mesentery in one inextricable conglomeration. To have tried to free the tissues would have only made mischief, so it was decided to wash out the abdomen, as in the previous case, and suture the wound.

In this case, too, improvement dated from the day of operation. The pain she had complained of did not return, temperature kept steady, and the mass gradually lessened and softened.

Quite recently, about a month ago, I saw her; she is plump in the face, her limbs are firm and round, and her shape is almost normal. There is still swelling of the abdomen, but, relatively to what it was, it is trifling.

CASE III.—M. G., aged 17, had been ill for over six months with what had been diagnosed very early as tubercular peritonitis. Part of this time had been spent in the Western Infirmary, from which she was dismissed as not likely to profit by further residence. She was brought under my care in December, 1899, and her chief complaint was the pain she suffered in the abdomen. She was, at the same time, troubled with a short, hacking cough, evening rise of temperature, and night-sweats. The abdomen was very much distended with fluid, which gave a distinct wave on tapping. When the abdomen was opened, it was found to contain a large quantity of glairy yellow fluid (like the more fluid portion of marmalade), of which I removed all that I could. The peritoneum was studded over with miliary tubercle. The cavity was washed out and cleansed, the wound sutured, and a rubber drainage-tube left in.

The result was disappearance of pain, no rise of evening temperature, and the swelling did not return.

It is to be noted that in this case operation was undertaken purely for the local effect. She kept very well for a few weeks, when the pulmonary symptoms became much more marked. She lingered on for about six months after the operation, but had very little trouble from her abdominal condition.

CASE IV.—An old woman, aged 74, was sent in to the Cancer Hospital as a case suitable, malignant disease being suspected. She had severe abdominal pain, swelling, and slight rise of temperature in the evenings. Her age pointed to malignancy, even though no marked tumour could be felt. On the other hand, there were two sinuses in the axilla and one above the elbow on the right side, leading down to glands that were breaking down—so that the balance of evidence was on the side of tubercle.

I opened this patient's abdomen, to find a copious amount of straw-coloured fluid, with, like the previous case, the peritoneum studded thickly over with miliary tubercle. The same cleansing and irrigation was gone through, and a drainage-tube inserted, which was removed in a week.

As in the others, pain and distension were relieved, and now she is comparatively well. Signs of the spread of the disease are apparent in tubercular abscesses on right foot, left temple, and near the right knee-joint. This case, like Case III, had tubercle in other places besides the abdomen, pointing to the fact that the abdominal condition was most probably a secondary one. We know from other tubercular cases how unsatisfactory operation, say, on a joint, often is in a patient who has some other part affected by the same disease.

These cases are four consecutive cases that occurred in my work, and are fairly typical of what one gets. The local improvement was most marked in every case, though one did die from phthisis pulmonalis. A year and a half has now elapsed without recurrence in the first two. No sufficient theory has been promulgated to account for the marked results of such a simple procedure, but it is a good subject for enquiry. The solution of the problem will, in all likelihood, arrive about the time that we understand why mercury and iodide of potassium are so efficacious in the treatment of syphilis.

TONSILLAR CALCULI OCCURRING IN BOTH
TONSILS.¹

By ALBERT A. GRAY, M.D., F.R.S.E., F.F.P.S.G.,
Aural Surgeon to Glasgow Central Dispensary.

THE following case of calculus in the tonsil is of interest chiefly by reason of the fact that both tonsils were affected by these curious concretions :—

A gentleman, æt. 68, by profession an architect, consulted me on 3rd January, 1900, complaining of a sore throat of two months' duration. The pain was not very severe, but its constant presence, and the fact that ordinary treatment had brought about no amelioration, made him anxious to ascertain the cause of it. This pain was more pronounced on the left side, but was felt to a certain extent over the whole pharynx.

The patient was of a distinctly gouty constitution, as evidenced by several chalk-stones which were present in the phalangeal joints of the fingers, and by the presence of iritis in both eyes, which an oculist had informed him was due to his gout.

On examination, the pharynx appeared somewhat reddened. The left tonsil was distinctly larger and redder than its fellow on the opposite side, and felt firm to the touch. The condition might, indeed, have been mistaken for malignant disease—and, indeed, the fear of this had been weighing on the patient's mind.

On probing the tonsil carefully, however, the instrument was felt to come in contact with a hard, rough, movable object in the upper part of the gland, and it was clear that the case was one either of necrosis of bone or of calculus of the tonsil. The fact that there was no discharge of pus or other evidence of bone mischief, and further, as the probe had been passed into a tonsillar crypt before coming in contact with the object, the inference was that a calculus was present.

On attempting to remove the calculus, or even to probe it gently, the patient felt considerable pain. A few particles, however, came away, sufficing to show conclusively the nature of the body.

The patient desired chloroform for the removal of the stone,

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 15th February, 1901.

which he wished to have done the following day. That evening, however, when he was sitting in front of the fire, he felt a hard substance in his mouth, and spat it out in the grate, where it was lost. After this his symptoms disappeared, and he left town for a holiday.

I heard no more of the patient until 22nd June, 1900, when I received a letter from him in which he wrote to say that he had been troubled a good deal with his throat since March, but it never occurred to him that it might be due to another stone until two days before he wrote—that is, on 20th June. On that day he felt a slight grating sensation in the throat, similar to that which he had experienced when I saw him last time, but on the other side. On the 22nd June he wrote saying, "As I lay awake this morning, sure enough another stone came into my mouth, but I did not rashly spit it out as I did the last one, but laid it aside, washed it, and now send it to you. It is hardly so large as the last one, but I am very glad to get rid of it, and I trust no more will follow."

Since writing, the patient has not been troubled in respect to his throat.

The origin of tonsillar calculi, or tonsillitis, as they are sometimes called, is a matter of dispute. Bosworth¹ considers that a foreign body obtaining entrance to the crypts is the cause of their occurrence. But the case just described would rather negative that view, since it is highly improbable that foreign bodies would become embedded in both tonsils within so short a period and without the patient's knowledge.

Gruening² states that they are brought about by the presence of the *leptothrix buccalis*, and that chemically and microscopically they are of the same nature as the concretions which sometimes gather round carious teeth. Lennox Browne supports this view. Of historical interest is the view of Schenk,³ who, in the year 1609, described them as being of gouty origin. The patient whose case has just been related was certainly of a pronounced gouty constitution.

Aitchison-Robertson⁴ says that tonsillar calculi occur in persons who have suffered from repeated attacks of tonsillitis, and, though this is true in the general sense, it does not apply to the case described above. The same writer is of opinion that the larger calculi are formed by the retention of pus in

¹ Bosworth, *Diseases of the Nose and Throat*, 1892, vol. ii, p. 180.

² Gruening, *Arch. f. Laryngol.*, vol. iii, p. 136.

³ Schenk, *Obs. Med. Rar.*, p. 227, Frankfort, 1609.

⁴ Aitchison-Robertson, *British Medical Journal*, 7th January, 1899.

the interior of the tonsil, the abscess having never discharged completely "the residual matter has undergone caseation and subsequent calcification."

Robin¹ considers that the stones may take their origin in small calcareous crystals, which may be seen in the centre of the tonsil.

As regards size, these concretions vary exceedingly. The largest on record is that described by Robertson.² It was the size of a small hen's egg, and weighed 26·8 grammes, or nearly 1 oz.; while Lange³ removed two calculi from one tonsil, one of them weighing 24 grammes and the other 4 grammes. The most weigh about 3 or 4 grains. That obtained from the patient whose case is described above weighs 4 grains. They are usually more or less nodulated, and give off a disagreeable odour. In colour they are pale brown.

The chemical constitution of these peculiar formations has been investigated by Langier. He states the composition to be as follows:—

Phosphate of lime,		50·0 per cent.
Carbonate of lime,		12·5 „
Mucus,		12·5 „
Water,		25·0 „

The gigantic calculus described by Aitchison-Robertson, and referred to above, was shown on analysis to have the following constitution:—

Organic matter, ...	18·40 per cent.
Inorganic matter, ...	81·60 „
Phosphoric anhydride, ...	50·00 „
Calcium and magnesium oxides, ...	28·20 „

From these two analyses, therefore, it must be assumed that the chemical constitution varies considerably. It should be added that the *leptothrix buccalis* is generally found in association with the calculus.

As regards diagnosis, this may be easy or difficult. In those cases in which a portion of the stone appears above the surface of the mucous membrane, there is, of course, no difficulty. The stone, however, as in the present instance, may be deeply embedded in the tonsil, and give no evidence of its presence beyond the symptoms. In these cases, each crypt should be carefully probed; thus, in the case reported

¹ Robin, *Fraité des Humeurs*, 1874, p. 551.

² Aitchison-Robertson, *loc. cit.*

³ Lange, *Deutsche Zeitschr. f. Chirurgie*, Bd. 39, Hft. 1 and 2.

above, the stone was only felt after three or four crypts had been examined.

Tonsillar calculi are said to be uncommon. It must be remembered, however, that they frequently give rise to no symptoms. Furthermore, there is no doubt that, for the reason above given, they often escape recognition. Their occurrence, therefore, may not be so rare as has been supposed.

An interesting paper on the subject, and one to which the present writer is much indebted, is that by Aitchison-Robertson, which appeared in the *British Medical Journal* for 7th January, 1899.

NOTES ON A CASE OF SYMPHYSIOTOMY.¹

By JOHN M. MUNRO KERR, M.B., C.M., F.F.P.S.G.,

Obstetric Physician to the Glasgow Maternity Hospital; Assistant to the Professor of Midwifery, Glasgow University; Dispensary Physician for Diseases of Women, Western Infirmary.

ALTHOUGH the operation of symphysiotomy in recent years has been much discussed elsewhere, being strongly recommended in some quarters and equally strongly condemned in others, it has never been considered by this Society. Indeed, so little attention has been given to it, that, as far as I know, Dr. Jardine and myself are the only two obstetricians who have performed it in Glasgow. This is somewhat unfortunate, as, considering the prevalence of rickets, few cities offer a better opportunity than ours for testing the value of the operation, and I think that all, except the most prejudiced, will admit that it is, at least, deserving of being thoroughly examined. I cannot think that an operation which has lingered on so many years, has had such a strong revival in recent times, and has obtained such decided support from some of the most distinguished obstetricians of the day, is one that has no place in practical obstetrics, and should be finally "banished from our hospitals." To-night, however, I have no desire to pose as a strong supporter of the operation, for, as yet, I have only performed it once; but I do wish to stand by those who are anxious to give it a thorough trial. On theoretical grounds, it has always seemed to me an operation that has its place, and, from the practical experience I have

¹ The patient was shown and the notes read at a meeting of the Glasgow Obstetrical and Gynaecological Society held on 29th May, 1901.

had of it in the case I am about to relate, that opinion has been confirmed.

Mrs. P., æt. 36, xi-para, was admitted to the Maternity Hospital under my care on 3rd April, 1901. She informed the house surgeon that in most of her previous labours she had been attended by a well known obstetrician of this city, but that, as he was from home, she had come to be delivered at the hospital.

Her obstetric history, which was very striking, was as follows:—The first child was delivered with forceps, and was dead; the second also perished whilst being extracted with forceps; the third, fourth, fifth, sixth, and seventh were delivered with forceps or after version, and in all cases the children were dead or died within a few hours; the eighth child presented by the breech, and was delivered dead by a nurse; the ninth child was born alive with forceps, and is still living, strong and healthy; the tenth child was delivered in the hospital after craniotomy. The delivery even then was not easy, so the report says. The child is stated to have weighed 9 lb., and, on questioning her regarding the other children, she said they were all large. The patient had therefore had ten deliveries at full time with only one living child, and that in spite of the fact that she was attended by a physician of great skill in obstetric medicine. He had, he informed me, repeatedly tried to persuade the patient to have labour induced, but she always refused, and sent for him only when labour was already in progress.

When admitted to the hospital on this last occasion, I found her advanced in labour. The os was fully dilated, and "pains" had been occurring regularly for nearly twenty hours. On examination by palpation, the child was made out to be presenting by the vertex, but the head was quite movable at the brim, and overlapping the symphysis pubis. The membranes were unruptured, and the foetal heart sounds were strong and regular. The general condition of the patient was thoroughly satisfactory.

The following were the pelvic measurements:—Interspinous diameter, 9 inches; intercrystal diameter, 10 inches; external conjugate, $6\frac{1}{2}$ inches; diagonal conjugate, $3\frac{3}{4}$ inches. I estimated the true conjugate at 3 inches—it certainly was not more than $3\frac{1}{8}$ inches. Considering the extent of the pelvic deformity, the obstetric history, the fact that the child was alive with its head movable at the brim and overlapping the symphysis, I decided that symphysiotomy was the operation

which, while subjecting the mother to little danger, offered the best prospect to the child.

The external parts about the symphysis and genitals and the vagina were thoroughly cleansed with soap and water, perchloride of mercury and lysol; turpentine and alcohol being used for the external parts in addition. An incision was then made, beginning about an inch above the clitoris, and extending upwards in the middle line for about 3 inches. The tissues down to the bone were divided, and the rectus abdominis on the right side severed. I then separated the bladder from the posterior surface of the symphysis. Dr. Jardine then passed a sound into the bladder, and dragged the urethra to the left side, so keeping it as far as possible away from injury. Keeping a finger behind the symphysis to protect the bladder, I divided the joint. This was accomplished with very great difficulty indeed. The tenotomy knife, with which I tried to do it, broke, and I had finally to use a strong scalpel. Having divided the symphysis pubis, I then severed the subpubic ligament close to the bone in the right side. After division, the surfaces gaped about half an inch. The patient was then placed in the Walcher position, Dr. Russell and I keeping up firm pressure on the sides of the pelvis. The wound in the abdomen and behind the symphysis I packed with sterilised gauze. Dr. Jardine then very kindly applied the forceps, and succeeded in getting an excellent grasp of the head, for one blade was directly over the face and the other over the occiput. With steady traction the head was gradually drawn through the brim. The force required to accomplish this was not very great, and the cut edges of the joint, when separated to their greatest extent, were never wider apart than an inch.

The child was born alive, and cried immediately after delivery. It weighed 7 lb., and measured 22 inches. The measurements of its head were as follows:—B.T., 3 inches; B.P., $3\frac{1}{4}$ inches; S.O.B., 4 inches; O.F., $4\frac{1}{4}$ inches.

After the delivery, the gauze was removed and the abdominal wound was closed. Several catgut sutures were put into the deep tissues, and silkworm gut was used for the skin and superficial tissues. A collodion dressing was then applied, with the object of completely sealing up the wound. Broad strips of plaster were then applied round the pelvis to keep the two sides in complete apposition.

The after-treatment was, as in all cases of symphysiotomy, very troublesome. Long sandbags were applied up each side of the limbs and thighs. By that means, and by cautioning the patient against moving, the pelvis was kept as far as

possible at absolute rest. Great care was exercised in the sponging of the parts and the emptying of the bladder, which was done with catheter every four hours for the first few days. On the fourth day the bowels were moved by an enema, and after that every third day. The wound was dressed for the first time on 16th April—thirteen days after the operation. There was then a little pus round the two lowermost superficial stitches, but that cleared away in three days. On 3rd May—a month after the operation—the patient was allowed up, and walked without feeling the slightest discomfort. There was no mobility to be made out at the symphysis. The day following she left the hospital, both she and the child being perfectly well.

The case which I have just described, you will admit, was peculiarly favourable for symphysiotomy. Some of those most strongly opposed to the operation may say that, with such a deformity—true conjugate, 3 inches to $3\frac{1}{2}$ inches—forceps or version might have proved successful, and will doubtless be able to quote cases where they have succeeded in dragging a live child through a pelvis with such a deformity. I also have done the same once or twice, but I have failed far oftener than I have succeeded. In dealing with a deformed pelvis, there is far too much brute force exercised in the practice of obstetrics, and far too little recognition of the limitations of the various operations, more especially of forceps, version, and induction of labour. All of us have been surprised at times at the wonderful results—mother little upset, child even sometimes apparently none the worse—after long-continued labour and much forcible traction with forceps or after version. Few of us, however, but must admit to having likewise often witnessed most serious disasters to both from such treatment.

The case, then, was a specially suitable one for symphysiotomy. The degree of deformity was such that one could reasonably expect a good result with it, and the previous obstetric history of the patient, and the fact that the head did not engage but overlapped the symphysis, removed all hope of success with forceps or version. Indeed, the only alternatives were to do craniotomy on a living child, or Cæsarean section if the child's life was to be preserved. All will admit, I think, that symphysiotomy was preferable to either.

Regarding the operation, I would direct your attention to two points. The first is that the division of the symphysis was peculiarly difficult. That has not been the general experience—indeed, in the latest series of English.

cases, Herman recommends, and others have done the same, the division of the symphysis subcutaneously. Another point connected with the operation is that the patient was put into the Walcher position during the extraction of the child. By that means a gain of a quarter of an inch was obtained in the true conjugate, and so the two pubic bones did not require to be so much separated. Two great objections to the operation are the troublesome after-treatment and the difficulty of preventing the wound becoming septic. In the case I have described, a very slight and late infection of the two lowermost stitches occurred.

At some future date, and after more experience of the operation, I hope to discuss its value and limitations. The operation, I feel sure, has, and will continue to have, a place in practical obstetrics, for there will always be particular cases when it will be the best treatment, if both the interests of mother and child are considered.

CURRENT TOPICS.

PREVENTION OF TUBERCULOSIS.—The usual monthly meeting of the Council of the Local Association was held in the City Chambers on Wednesday, 3rd July—the Lord Provost in the chair. After some discussion of the recommendations of the sub-committee appointed at the previous meeting, it was decided that the practical work of the Association should be inaugurated in the following way:—

1. Advertising in the Glasgow press the formation of the Branch Association and inviting new members to join.

2. Supplying each member with copies of the pamphlet issued by the parent Association, giving instructions as to the prevention of consumption.

3. Relieving the sufferings of consumptives who have not yet reached the incurable stage—(a) by the agency of district nurses; (b) by providing temporary residence in the country; and (c) by providing permanent employment in the country.

The Council appointed Mr. Anderson to be Secretary to the Branch Association.

Dispensary Physician, has been promoted to the full Dispensary appointment.

ST. MUNGO'S COLLEGE.—At a special meeting of the Governors held on 1st July, Dr. T. K. Monro was unanimously elected Professor of Medicine in the College, in room of Dr. Alex. Robertson, resigned.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1900-1901.

MEETING XI.—15TH FEBRUARY, 1901.

The President, MR. H. E. CLARK, in the Chair.

- I.—THREE AND A HALF YEARS' EXPERIENCE OF FARADISATION OF THE HEAD, ON SCIENTIFIC PRINCIPLES, IN THE TREATMENT OF CHRONIC INSOMNIA AND ASSOCIATED NEUROSES, COMPRISING A SERIES OF FORTY-SIX CASES.

BY DR. SAMUEL SLOAN.

Dr. Sloan's paper appears as an original article at p. 81.

- II.—DEMONSTRATION OF THE RESULTS OF RECENT EXPERIMENTS TO DETERMINE THE INFLUENCE OF THE EYEBALL ON THE GROWTH OF THE ORBIT.

BY DR. ERNEST THOMSON.

Dr. Ernest Thomson gave a demonstration of skulls (rabbits) from which one eye had been removed about the twentieth day with the object of determining whether removal of an eye in early life does or does not lead to failure of growth of the bones and soft parts of the orbit. The skulls showed that very marked deformity results, the anophthalmic orbit being smaller than its fellow in all directions.

The research has already formed the subject of a communication to the Ophthalmological Society of the United Kingdom, and the results will be found in full detail in the next volume of that Society's *Transactions*.

III.—TONSILLAR CALCULI OCCURRING IN BOTH TONSILS.

BY DR. ALBERT A. GRAY.

Dr. Gray's paper appears as an original article at p. 122.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1900-1901.

MEETING VI.—11TH MARCH, 1901.

The Vice-President, MR. A. E. MAYLARD, in the Chair.

I.—PENETRATING WOUNDS OF THE EYE, COMPLICATED BY THE PRESENCE OF A FOREIGN BODY IN THE EYEBALL.

BY DR. A. MAITLAND RAMSAY.

Dr. Ramsay's communication took the form of seven cases. They were brought forward as a clinical picture of the results, immediate and remote, which may follow a penetrating wound of the eye, complicated by the presence of a foreign body in the eyeball, and as demonstrating the use of the *x*-rays in the detection and localisation, and of the electro-magnet in the removal, of the foreign body.

CASE I.—W. T. was struck in the left eye by a chip of steel on 2nd October, 1899. The eye was little disturbed, and vision was not much impaired. In March, 1900, patient came to the Ophthalmic Institute, when the eye was found to be quiet and vision normal. With the ophthalmoscope the foreign body was seen in the lens, which, except for a small area around the foreign body, was transparent. He was advised to let well alone, and the eye gave no trouble until 26th January, 1901, when cyclitis suddenly set in. The *x*-ray photograph showed the foreign body in the same position as formerly.

When treated by atropine, opiates, and fomentations, the cyclitis subsided.

CASE II.—Specimen of an eye showing aperture in iris and cataractous lens, the result of a piece of a percussion cap having entered the eye at an explosion. The damage done by this foreign body was so severe as to irreparably damage the eye, and the magnet could not be useful because the metal was copper.

CASE III.—F. C., stonemason, was struck in the eye by "something" while at work stonecutting. An *x*-ray photograph demonstrated the presence of a foreign body, and the application of the electro-magnet caused pain to the patient, and drew forward from the interior of the eye into the anterior chamber a piece of metal which was easily removed. The result to the patient was vision by which he could see to guide himself about, and sight was steadily improving when he left the hospital.

CASE IV.—J. J., ironworker, came to the Ophthalmic Institute on 23rd September, 1900, having been struck six months previously with a chip of steel, which, however, was not thought to have lodged in eyeball. The *x*-ray photograph demonstrated its presence, and its position was localised by a modification of the Mackenzie-Davidson method. An incision was made opposite the site, and the foreign body removed by the electro-magnet, the resulting vision being $\frac{1}{80}$ of the normal.

[Since this patient was shown to the Society, a capsulotomy operation was performed, and this was followed by cyclitis, which for the present has reduced vision to a perception of light and shade.]

CASE V.—Specimen of an eye which was irreparably damaged from the moment that the foreign body entered it.

CASE VI demonstrated the fact that even after detection and localisation of a foreign body in the eye by *x*-rays, the electro-magnet may fail to remove it if it has remained in the eyeball for some time and become encapsuled. In this case (injured ten years ago) the cataractous lens was washed out, and the foreign body was still in the eye. Vision was steadily improving, but the presence of the foreign body will always be a menace to the eye.

CASE VII.—J. H., æt. 31, was struck on the eye, when 10 years of age, by a piece of metal. Under treatment the eye got "well," and did not inconvenience him much, and vision remained good until recently, when pain commenced and vision began to deteriorate. He was admitted with a history of recurrent cyclitis, which at first improved under treatment, but relapsed again and again, until vision was totally destroyed. When the eye was enucleated, a piece of metal was found embedded in the lower aspect of the ciliary region.

The communication was illustrated by skiagrams, pathological specimens, and drawings.

II.—PAPILLOMATOUS CYST OF THE OVARY.

By DR. W. L. REID.

Report by Dr. Gracie, House Surgeon.—Mrs. P. M., æt. 49, was admitted to the Western Infirmary on 12th February, 1901, complaining of pain and swelling of the abdomen.

She began to menstruate at the age of 13, and was regular every four weeks until 45. The menstrual flow continued on each occasion for about three days. She has had no dysmenorrhœa.

Patient was married at 22, and had one child, born about a year after marriage. The confinement seems to have been mismanaged, as she states that the placenta did not come away entire, and during the first fortnight large clots of blood were discharged. "Milk fever" then supervened, and for four weeks, she says, she was almost insensible. Immediately following that she had an abscess at the umbilicus, which continued to discharge for about four months; afterwards she was able to go about a little and do some work.

When she was 32 she consulted Dr. Reid and Dr. Burns regarding a tumour in the abdomen, which had been there for about a year. They advised delay for six months, and at the end of that period she came back and saw Dr. Burns, who told her that there was no necessity for operation, as the tumour had practically disappeared.

After that she was pretty well until the climacteric period at 45, when she began to feel "ill," and had occasionally to take to her bed. At that time she noticed that her body was "swelling." She has never had any swelling of the legs.

In October, 1899, she got a severe "nervous shock," the effects of which confined her to bed for seven months.

In January, 1900, she took several fainting turns in succession, and then she had purging and vomiting, and a quantity of "matter" came away by the bowel. At the same time the abdominal swelling seemed to disappear.

In March, 1900, she noticed the present swelling coming on very slowly, and it seemed to come from the left side. She suffered no pain until last December, by which time the swelling had become very large. On account of the severity of her pain, the swelling was tapped on 30th December, and $3\frac{1}{2}$ gallons of greenish fluid, like stagnant water, were withdrawn. She got only slight relief from the tapping, and the pain has been very severe since, though at present somewhat improved. It is confined to the lower part of the abdomen, particularly at the back, and it is of a burning character.

Bowels are at present fairly regular, but they were very costive after the tapping, and a motion gave rise to severe pain. She has difficulty in passing urine, but there is no incontinence, nor is there pain during the act of micturition. Urine contains no albumen, blood, or sugar.

The abdomen is enlarged, not projecting in the middle line, but sagging out in both flanks. There is a well-marked umbilical hernia about the size of an egg. Percussion is quite clear in both flanks and across the whole abdomen above a line 3 inches from the pubes, below which it is comparatively dull. The left flank is also clear on percussion. The percussion wave across the lower part of the abdomen is very marked.

Pressure on the anterior vaginal fornix gives rise to pain, but nothing more than a feeling of fluctuation is made out. The cervix is normal in size, and not very low in the pelvic cavity. No. 6 sound passes to $2\frac{1}{2}$ inches, and any attempt to move the uterus gives rise to pain shooting down the left leg. The fundus seems to be immovable, but bimanual examination is impossible owing to the presence of fluid in the abdomen.

Examination by the rectum shows the presence of a tumour about the size of a large flattened orange in the left iliac region, apparently quite fixed in the pelvic cavity. The diagnosis is that of malignant disease, probably of the left ovary.

20th February.—On opening the abdomen to-day, a considerable amount of serous ascitic fluid was discharged. Strongly adherent to the posterior and left wall of the uterus there was found a papillomatous cyst, which may have

ruptured, but now was twice the size of an orange. This was enucleated with some difficulty owing to bleeding. The abdomen was then washed out with normal saline solution, a considerable quantity of which was left. Bowel was adherent to the tumour in a number of places. The wound was closed in three layers.

21st February.—After operation patient seemed fairly well up till about 11 o'clock this forenoon, when, on being spoken to, it was observed that she was unable to speak. Her eyes were open and staring, and she kept rolling her head continually from side to side. No definite paralysis could be made out, but it was thought that the right leg and arm were more passive than the left. In the afternoon she developed the tracheal rattle, and gradually sank into profound unconsciousness. She died about 7:30 P.M.

Remarks by Dr. W. L. Reid.—This case is chiefly interesting because of its obscurity. Seventeen years ago patient had a tumour of the abdomen, which I saw, but of which I have neither notes nor recollection. The advice given by Dr. Burns and myself was that it should be left alone, and in a few months it seemed to have disappeared without symptoms.

Patient remained well until the menopause, four years ago, since which she had felt ill, and the abdomen had gradually enlarged until fourteen months ago, when, after severe faintings, followed by purging and vomiting, a "lot of matter" was discharged from the rectum, and the abdominal swelling disappeared. This was followed in six or eight weeks by the reappearance of the swelling, and at such a rate that, two months ago, $3\frac{1}{2}$ gallons of fluid were removed by tapping.

Of the nature of the original tumour which disappeared seventeen years ago, we must, I am afraid, be content to remain in ignorance. Was the swelling which appeared after the menopause, and disappeared with acute symptoms, a ruptured ovarian cyst? I am disposed to think so, and, further, that the reaccumulation of fluid was due to a chronic irritation of the peritoneum by the papillomatous material introduced into it at the time of the rupture.

As to the immediate cause of death, it seems to me most probably due to an ordinary apoplectic seizure. There was no albumen in the urine, and no known cause of embolism, except from the seat of operation. This, again, is thrown out of consideration, as, if originating there, the embolism would have been, not cerebral, but pulmonary.

Dr. A. R. Ferguson showed the specimen, which he characterised as a perfect specimen of papillomatous cyst of the ovary. On opening it in its equator, it was found that the papillomatous masses had been crushed by the tension of the contained fluid at a former period. Microscopically, the characters were those of papillomatous cyst, with very richly arborescent connective tissue of myxomatous type, covered by several layers of epithelium; the superficial layers were flattened. There was no evidence of recent inflammatory action. Tags were present on outside of the tumour, showing old adhesions.

Dr. Rutherford asked if there had been any infection of the peritoneum with papillomata.

Dr. Ferguson replied in the negative.

Dr. Rutherford thought that this case was not so malignant as these growths usually are. There was a delayed or suspended activity during so long a period of quiescence.

Mr. Maylard asked if there had been any illness to account for the adhesions. After admission the temperature had been high in the evening, but this was subsequent to the adhesions, and not accountable for them. Had there been any symptoms of obstruction of the bowels, or had there been any discharge from the bowel?

Dr. W. L. Reid, in reply, stated that there was no history, so far as he knew, of any symptoms pointing to bowel obstruction.

III.—MULTIPLE EPITHELIOMATA OCCURRING IN THE MAMMÆ OF A FEMALE CAT.

By MR. G. H. EDINGTON.

The specimen shown consisted of the anterior abdominal wall of a female domestic cat. The animal was 11 years old, and had never had a litter. For some years "lumps" on the abdomen had been observed. Quite recently some of these had commenced to discharge, and the animal had become somewhat lethargic. When I saw the cat for the first time (2nd February, 1900), the hindermost mamma on the left side was the seat of a large prominent tumour, the surface of which was slightly ulcerated. A similar swelling, covered by sound skin, was present in the region of the nipple immediately in front. On the right side was a rounded mass about the level of mid-thorax. All of these were characterised by great

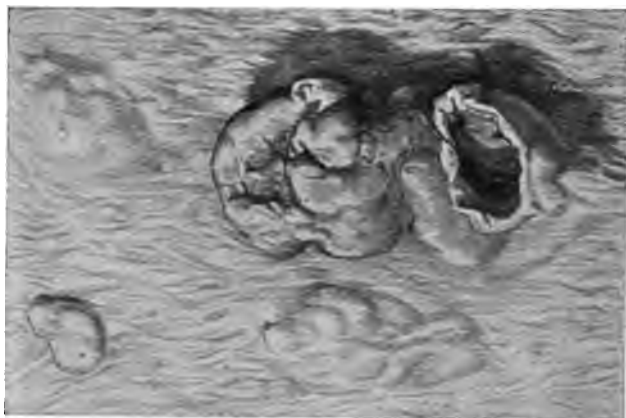


FIG. 1.
EXTERNAL APPEARANCE.

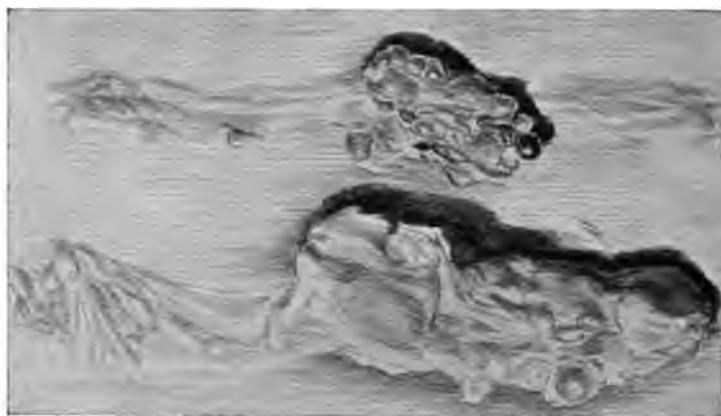


FIG. 2.
INTERNAL SURFACE OF ABDOMINAL WALL,
AFTER DISSECTION.

hardness, and the hindermost tumour on the left side is adherent to the abdominal wall.

A fortnight later, the central part of the ulcerating tumour had sloughed out leaving a stinking cavity. Ulceration had commenced also on the surface of the swelling immediately in front of this tumour.

Rounded bluish nodules were seen and felt in the abdominal wall. The condition being inoperable the animal was destroyed. On cutting open the abdomen the two tumours on the left side were found bulging on the peritoneal surface of the abdominal wall. The nodules in the wall proved to be cystic dilatations of the mammary tissue. There was no involvement of lymphatic glands.

The accompanying plate illustrates the condition of the parts after death.

Microscopic examination showed the tumours to be typical epitheliomata. The bulk consists of masses of squamous epithelium, more or less infiltrated with leucocytes and separated from one another by connective tissue stroma. The epithelial cells are very large, and some show vacuolation. There is necrosis in centre of many of the masses, but the cells at the growing margin are well defined, and are flattened or cylindrical in shape.

Deeply in the centre of the tumour are slightly dilated mammary acini and ducts, lined by cubical epithelium. In most instances the mammary tissue is separated from the tumour by distinct connective tissue, and the difference in the character of the cells points to the tumour being of epidermic origin.

Examination of cystic mammary tissue shows the epithelium flattened against a connective tissue wall, but in parts the epithelium projects into the lumen so markedly as to give rise to a papilliform appearance.

[The specimen is now in the Hunterian Museum in the University of Glasgow.]

DESCRIPTION OF PLATE.

FIG. 1. On right side are seen from above downwards: (1) Nipple with surrounding cystic mammary tissue, (2) tumour commencing to ulcerate, (3) excavated tumour mass; on left side: (1) tumour in nipple region, (2) cystic mass posterior to succeeding nipple, (3) nipple with normal appearance and surrounding lungs.

FIG. 2. Left corresponds to right of Fig. 1, and *vice versa*. On left of figure are seen from above downwards: (1) Cystic mammary tissue, (2) and (3) conjoined tumour-masses with mammary cysts in parts; on right side above and below is apparently normal mammary tissue, with cystic masses situated between.



FIG. 1.
EXTERNAL APPEARANCE.



FIG. 2.
INTERNAL SURFACE OF APOLOMANAL WALL.
OF THE DISSECTION.

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IV.—MICROSCOPICAL PREPARATIONS OF A SMALL MYXOMATOUS TUMOUR OF THE FINGER.

BY DR. A. R. FERGUSON.

Dr. Ferguson showed microscopical preparations of a small myxomatous tumour of the finger, arising in the site of a trivial accidental puncture. The tumour was first noticed about seven months afterwards. It formed a small hemispherical nodule, about the size of a split pea, entirely covered superficially by a thin layer of epithelium, and demarcated from the surrounding skin by a well-marked groove. Microscopically, it was found to be entirely situated in the corium, which enclosed it above and below. It lay between the corneous and granular layers superficially, and the deeper part of the Malpighian layer enclosed it on the deep aspect.

Its structure was that of a rather scantily cellular myxoma, traversed by a comparatively large number of very fine capillaries. The cells of the tumour appeared to be developing along the paths of the capillary vessels.

V.—SKIAGRAM OF DISLOCATION OF FINGER (CARD SPECIMEN).

BY DR. H. RUTHERFURD.

The skiagram showed dislocation of second phalanx of the index finger. The condition was treated with a satisfactory result by incision on the dorsum of the joint.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1900-1901.

MEETING X.—29TH MAY, 1901.

The President, DR. ROBERT JARDINE, in the Chair.

I.—FRESH SPECIMENS.

BY DR. J. STUART NAIRNE.

(1) Small fibroid of uterus, (2) large fibrocystic tumour of uterus; both removed by supravaginal hysterectomy.

II.—NOTES ON A CASE OF SYMPHYSIOTOMY.

BY DR. J. M. MUNRO KERR.

Dr. Kerr's paper appears as an original article at p. 125.

III.—ADJOURNED DISCUSSION ON RETROVERSION OF THE NON-GRAVID UTERUS: ITS CAUSATION AND TREATMENT.

Dr. Russell said—In his paper on retroversion of the uterus, Dr. Kelly has wisely made no reference to such complications as pregnancy, antelexion of the retroverted uterus, or prolapse, all of which deserve special separate consideration. Even with these restrictions, however, the subject is wide, and it is impossible for one to take up every point suggested by the paper.

No better definition could be given than that adopted by Dr. Kelly when he describes retroversion of the uterus as the condition in which the fundus lies nearer than the cervix to the posterior pelvic wall. He distinguishes between fixed and mobile retroversion, but rightly discards further classification into degrees, a distinction which is arbitrary, and apt to vary according to individual idea. It is more scientific to describe the extent of the retroversion by its relation to certain constant pelvic landmarks.

As to its causation, I believe that it is almost invariably a pathological condition, and that this would be found to be true even in the case of nulliparous and unmarried women if we were able to get complete details of the previous history. It is difficult to understand how a sudden strain, or even prolonged habitual distension of the bladder or rectum, could cause a constant retroversion. With my present knowledge and experience of cases, I do not believe it to be possible for a mobile retroversion, uncomplicated at any stage of its previous history by inflammatory trouble, to become fixed by the mere effect of pressure by or on other structures near it.

The most important consideration, however, is the treatment of this condition. Dr. Kelly has not referred to prophylaxis, but I think it deserves an important place in our discussion. Most cases of retroversion follow labour or abortion, and if every practitioner were to make sure of examining his cases carefully, as a method of routine, within the first two or three months after an abortion or a confinement, he would be able to detect a retroversion early, and to correct it at a time when there is every chance of curing the condition by such palliative

means as rest, hot douching, glycerine or ichthyol applications, and the subsequent use of a suitable pessary for a short time. By taking this precaution, I have more than once discovered a retroversion, and been able to correct it in time. Curetting in abortion, and watching and promoting the involution of the uterus in the puerperium itself, are also, of course, essential.

With regard to the use of pessaries, they frequently give rise to trouble by pressing upon and irritating neighbouring structures, and I think that, excepting as a temporary means of treatment, they should not be employed where the deviation can be corrected by operative or other measures. This applies specially to cases complicated by any form of adhesion.

I have not left myself time to discuss the merits of the various operations that have been adopted, but I wish, in concluding, to say that, though there is much to be said in favour of ventrofixation, I think that in the future we shall hear of even better results by treating this condition through the posterior vaginal fornix in the manner described by such men as Pryor. It has to be remembered that most cases of retroversion are in reality in some degree fixed, *i.e.*, there is some form of adhesion posterior to the uterus. With proper aseptic precautions it is an easy and safe thing to enter Douglas' pouch, explore the neighbouring parts and separate adhesions, and then, by means of sterilised iodoform gauze packing, keep the uterus in its normal position. The patient remains in bed for a fortnight or so afterwards, while the packing is renewed as is found necessary.

This method of operative treatment seems to me to be more rational, as by it we strengthen the natural supports of the uterus posteriorly. There is also less risk to the patient; there is no abdominal incision, and no fear as to the result of anterior adhesions; no pessary is required afterwards; and, even if ovarian or tubal disease is discovered, it can be satisfactorily treated during the operation.

Dr. Stark said that the Society was indebted to *Dr. Kelly* for his paper, which was on a subject which, though well worn in discussion, was by no means threadbare. Perhaps it would lead some to consider retroversion of the uterus in a more serious light than is ordinarily the case; but, in spite of what has been said, there are many instances of backward displacement where neither pessary nor operation is required. Such cases are sometimes congenital. In any case, exception must be taken to the statement that all cases of mobile retroversion require curetting, and he considered that it ought not to go

forth from the Society without protest against its sweeping character.

Curetting is an operation useful and necessary in many cases, but when no endometritis exists it should not be performed. It required such careful attention to aseptic details, that if all women suffering from retroversion had to submit to the operation, in many cases their last stage would be much worse than their first.

A common impediment to the retention of a pessary in good position is a fibroid tumour in the posterior wall of the uterus, and this should be carefully looked for in cases which seem very readily to relapse in spite of a pessary. He also considered that some attention should be given in suitable cases to preliminary medical treatment—douching, tampons, &c.—before a pessary is used, as in many cases adhesions will then yield, and a healthier condition of the pelvis generally be brought about.

As regards operations, he prefers ventrofixation to any other for one reason, that a careful examination may first be made of the organs, and adhesions broken down. When this is done, and diseased parts removed, the fixation can be performed in safety. He now prefers catgut to silk in the suspension of the uterus.

Dr. J. Edgar agreed with most of *Dr. Kelly's* views, but thought he had not done himself justice in making his paper so short. There were many faults of omission. We should recognise that retroversion may be physiological from the uterus being pushed back by a distended bladder, therefore must ensure that both bladder and rectum are empty before making a diagnosis. He was inclined to retain the division of backward displacement into degrees, and regretted there was not more unanimity with regard to the nomenclature. He spoke of them as—First degree, uterus vertical; second degree, lying back at a angle of 45° ; third degree, horizontal with fundus directed backwards; fourth degree, below this. Criticising *Dr. Kelly's* statement that retroversion may cause adhesion, he said that *Dr. Kelly* rejected the classification into degrees, because, when the uterus is mobile, it constantly varies in position; yet, immediately afterwards, *Dr. Kelly* quotes and agrees with *Küstner* that a uterus may become fixed simply through lying immobile in the pouch of Douglas. He himself did not believe that adhesions are caused by simple contact. As regards causation, an over-distended bladder might produce backward displacement, and, in support of

this, he quoted the case of a typewriter in whom he regarded this as the main factor. Ruptured perineum in the puerperium was a cause, and this should always be looked for and repaired.

In cases of retroversion found during the puerperium, a pessary should be inserted about a fortnight after parturition, and if worn for six to twelve months, a cure was most likely to result.

In cases complicated by adhesions, medical treatment and stretching of adhesions was good. Operation should be limited to cases unsuitable for pessary treatment, and these formed a small proportion. He preferred ventrofixation, and used strong catgut, as he had previously had bad results with silk.

Dr. W. L. Reid said that most cases of retroversion were due to subinvolution, especially aided by the premature use of forceps, resulting in tears of the cervix and perineum. The condition was further aided by the patient rising too soon in the puerperium. The uterus was inflamed, and got displaced downwards. He agreed with the view that retroversion does not cause adhesions unless irritation is present, and he found that the great majority of cases were non-adherent. A certain percentage of retroversions do not require treatment, especially if found towards the menopause. He believed greatly in pessary treatment, and so applied that it kept the uterus in the position required to permit of intra-abdominal pressure acting on the posterior wall. Cases that are congenital with a short anterior vaginal wall were best left alone. He preferred ventrofixation when operation is necessary. The Alexander-Adams' operation required months of careful after-treatment to prevent a hernia forming, although great good had resulted in those cases where he had operated by this method.

Dr. James Adams said that many retroversions were congenital, and operation did no good. As many cases followed child-birth, where the perineum was torn he did a plastic operation. He commended the use of abdominal exercises to strengthen the abdominal muscles; these also acted on the round ligaments, and some cases of retroversion were thus cured. He referred to the operation bearing his own name, and to the risk of hernia following it. He now slits up the whole inguinal canal, and stitches up with catgut. Stitch abscess might follow from the strain in the sutures.

He also drew attention to the course of the hypogastrics in the pelvis, as he considered them of importance in supporting the uterus.

Dr. Kelly replied.

IV.—ECTOPIC GESTATION, WITH FORMATION OF LARGE HÆMATOCELE AND SECONDARY RUPTURE INTO UPPER THIRD OF SIGMOID FLEXURE.

BY DR. JOHN EDGAR.

Mrs. H., æt. 39, was seen in consultation by Dr. Edgar on 18th April, 1901. The history obtained was that early in January, after a period of two and a half months' amenorrhœa, there was a sudden attack of cramp-like abdominal pains, with syncope and retching. Blood also appeared *per vaginam*. The medical attendant told her she was suffering from pelvic inflammation following upon an abortion. There were repeated attacks similar to the first, but at no time was there any rigor or any pyrexia. On 15th April a large quantity of chocolate-coloured blood was passed *per rectum*, and it was then recognised that the pelvic mass, which had been felt reaching up to above the umbilicus, was not inflammatory, but a pelvic hæmatocele. Dr. Edgar confirmed the latter diagnosis, and as the patient was getting rapidly weaker, and was passing blood from the bowel every ten to fifteen minutes, gave a grave prognosis, and stated that the only chance the patient had lay in an operation.

On admission into the Samaritan Hospital on the following morning, patient's condition was found to be very grave. She was anæmic and puffy, and the urine contained both blood and albumen.

As, however, the abdominal mass still reached higher than the umbilicus, and blood was still being passed every fifteen minutes *per rectum*, the abdomen was opened. The enlarged uterus was found fixed by numerous firm adhesions to all the adjacent structures, with the exception of the anterior abdominal wall. An attempt was made for some time to separate the adhesions, but was finally abandoned. The abdomen was closed, and a transverse incision was made in the posterior fornix. Through this incision a large amount of extremely fetid blood and fæces was expelled, and the mass collapsed. The cavity was douched and packed with iodoform gauze.

Patient rallied from the operation, but, though there was no fresh bleeding, fæces and grumous material continued to escape *per vaginam*. The temperature, which had been elevated for a few days before operation, rose still higher, and patient died on 24th April.

A *post-mortem* examination was made by Dr. Galt. His report is as follows:—

"*Summary of results.*—Gangrenous diffuse abscess cavity behind enlarged uterus, extending to pelvic wall on either side; connection behind fundus with *the upper third of the sigmoid flexure* by a fairly large opening, united organically with the uterus; uterus itself enlarged to size of about two and a half to three months' pregnancy; cavity normal.

"*External appearances.*—Body of a woman about 40; well nourished; no external sign of putrefaction; abdomen distended uniformly with gas; rigidity present only in lower limbs; operation wound 4 inches long, midway between umbilicus and pubis; no discharge therefrom.

"*Abdomen.*—Layer of fat, $1\frac{1}{4}$ inch thick, on abdomen. Stomach and intestines much distended with gas. No peritonitis or adhesions above the pelvis; uterus presents above the pelvic brim, and is about the size of a cocoa-nut. In the pelvis there is considerable purulent peritonitis; no recent blood. The fundus of the uterus is organically connected by firm fibrous tissue on the posterior aspect to the upper third of the sigmoid flexure, which is dragged towards the middle line, and shows a very loose mesentery.

"On removing the uterus, there is found behind it, and filling up the pelvis here from one side to the other, a gangrenous abscess cavity, the walls of which are quite black. There is little free pus, as there is free drainage through the pouch of Douglas. The appendages on either side are matted together by dense inflammatory adhesions, and cannot be properly separated.

"On incising the uterus *in situ*, its cavity is found to be practically normal; the uterine openings of the Fallopian tubes are patent. The tube on the right is dilated, and on pressure a little pus exudes into the cavity of the uterus. Below the dilated Fallopian tube on the right side there is a cavity about the size of a turkey's egg, filled with organised blood-clot. This cavity communicates posteriorly with the abscess cavity.

"On further examination of the sigmoid flexure, about the middle of that portion adherent to the uterus there is a

communication, admitting two fingers easily, with the abscess cavity beneath. The bowel otherwise is normal, including the rectum.

"The other abdominal organs are practically normal. The liver shows some fatty degeneration, and the spleen is enlarged (weighing about 10 oz.) and congested. Kidneys not examined.

"Microscopic examination of the blood clot contained in the cavity below right tube shows the presence of occasional disintegrated, and a very few well-formed, chorionic villi in the midst of well organised blood clot."

REVIEWS.

Electro-Hæmostasis in Operative Surgery. By ALEXANDER J. C. SKENE, M.D., LL.D. London: Henry Kimpton. 1901.

THIS is an excellent example of the rage for making books which has attacked our brethren on the other side of the Atlantic. Professor Skene's theories and practice as regards the use of the electro-cautery for hæmostasis are interesting and important, but why it should be thought necessary to expand what he has to say so as to make a book which will sell at half-a-guinea we cannot understand. All that is necessary to be said on the matter could easily have been put into a pamphlet of a hundred pages. Indeed, the author finds it so difficult to stretch out his matter to a sufficient length that he has had to introduce two chapters (34 pages) on the construction of an aseptic operating theatre, and on the practice of asepsis in surgery, the former of which is a *verbatim et literatim* copy of a report of an architect on the matter.

As to the essential part of the book, we can only say that it sets forth a much more extensive and general practice of galvano-cautery than we fancy any other surgeon has attempted. The special feature of the author's method is the use of an instrument which is both a clamp and a cautery, so that the tissues are compressed as well as desiccated; and it is plain that in dealing with the pedicle of a tumour, or the Fallopian tube and broad ligament, this method has many advantages. In dealing with tubercular lymphatic glands,

and with neoplasms of the skin and mucous membrane, the advantages of the method are not obvious to us, since the wound left has to heal by granulation, a process which must be more tedious and less perfect than when a clean incision is made with the knife, and healing takes place by first intention.

Pulmonary Consumption, Pneumonia, and Allied Diseases of the Lungs. By THOMAS J. MAYS, A.M., M.D. New York: E. B. Treat & Co. 1901.

THE object of this book, its preface tells us, "is to show that a certain class of diseases, which have always been regarded as pure lung affections, are originated by causes lying almost entirely exterior to the respiratory organs." "The fundamental concepts of the work," it says, "may be formulated into the following propositions:—

"1. That pulmonary phthisis in the large majority of cases is primarily a neurosis, and that the pulmonary disintegration is secondary ;

"2. That any agent, influence, or condition which undermines the integrity of the nervous system will engender pulmonary phthisis, or some other form of pulmonary disorder ;

"3. That the only remedies of value in the treatment of pulmonary phthisis are those which appeal to, and act through, the nervous system ;

"4. That of special value in the treatment of phthisis is the counter-irritant action of silver-nitrate introduced hypodermically over the vagi in the neck ; and

"5. That acute pneumonia, and other forms of acute pulmonary disease, are closely affiliated with disorder of the nervous system."

The argument really is that in pulmonary disease there is no exciting cause, but that diseases of the lungs are due to a primary affection of some part of the nervous system. In support of this, the author cites numerous cases of alcoholism and plumbism in which pneumonia or phthisis developed in the course of the disease ; and he seems to think that because the toxic condition occurred prior to the pulmonary, the former must necessarily be the cause of the latter. And, as if it were to clinch the argument, he says (p. 85):—"Moreover, when the deterioration which is thus produced (by lead, &c.) does not develop phthisis, it induces many of the symptoms which accompany that disease, as, for example, cough, dyspnoea,

rapid pulse, pain in the chest and extremities, weakness, emaciation." It is also argued that because the vagus is sometimes affected in locomotor ataxy, giving rise to laryngeal disturbances, the affections of the lungs which so often occur in the course of the disease must also be due to disease of the vagus. The pneumonia of influenza, too, is due to implication of the vagus.

There seems little doubt that the nervous system has a controlling influence over the nutrition of all tissues, and that when the trophic centres or their peripheral terminations are diseased the tissues must suffer accordingly. In this way we have a "predisposition to disease." But why must it exclude the presence of the "exciting cause," which modern medicine recognises as the specific factor in so many pulmonary conditions? It is true that Dr. Mays speaks of the tubercle bacillus with a certain amount of respect; but he thinks that the fact of so many people being brought in contact with cases of tuberculosis, and so few contracting the disease, is evidence that "the efficiency of the tubercle bacillus as a cause of pulmonary consumption in the human subject is over-estimated."

The rest of the book is little more than a rather wearisome elaboration of the ideas as stated above; and it only remains for us to add that we consider the arguments used most illogical and thin, and that the author has a very feeble grasp of his subject.

Clinical Lectures on Stricture of the Urethra and Enlargement of the Prostate. By P. J. FREYER. London: Baillière, Tindal & Cox. 1901.

THESE lectures, six in number, were delivered by Colonel Freyer at the Medical Graduates' College and Polyclinic in November last. The object in publishing them is "to give a clear, concise, and practical *résumé* of our present knowledge of the subjects dealt with." The methods of treatment advocated are those which the author has, from personal experience, found "sound and effective."

Lecture I deals with the pathology, symptoms, results, and diagnosis of stricture. For the exploration of the urethra in diagnosis the author recommends the use of gum elastic olivary bougies. Lecture II is concerned with treatment of stricture by dilatation, and III is devoted to the consideration of operative measures.

Lectures IV, V, and VI deal with prostatic enlargement, its diagnosis and treatment.

We are disappointed to find no light thrown on the question of the causation of "urethral fever"—according to the author "it is difficult to say" what the cause may be.

In internal urethrotomy the author holds (p. 53) that healing by granulation "is to be avoided, leading, as it does, to subsequent contraction," and we are left to infer that the wound should unite by first intention; this point should be cleared up. The author is favourably impressed with the curative effects of internal urethrotomy, when employed in suitable cases, a list of which he gives at the commencement of this chapter.

We are surprised to find no mention of suprapubic drainage or of dilatation of stricture by instruments passed from the bladder. The former of these procedures is of great value in "impassable" stricture.

Coming to the second part of the book, we find directions for passing the catheter somewhat confusing when we compare pp. 77 and 83. Special attention is drawn to the existence of a preprostatic pouch, a condition which is of great importance, and which seems to have been overlooked in the text-books. In prostatectomy for enlarged lateral lobe the author advocates a modification of the operations of Nicoll and of Dittel. He looks on castration and vasectomy as operations followed by some shrinkage of prostate, but only when the enlargement is of the adenomatous variety. The rapid amelioration following removal of the testicle may, he thinks, be largely due to relief of congestion.

We cannot agree with the author as to the relative dangers of perineal and suprapubic cystotomy. He looks on the former as a "much less serious operation, . . . to be selected" if the patient be very feeble.

The book is well written, and, coming from one so experienced as Colonel Freyer, is worthy of consideration by all who have to deal with the class of cases of which it treats.

A Manual of Otology. By GORHAM BACON, A.B., M.D.
London: Henry Kimpton. 1901.

EXACTLY two years ago the first edition of this book was favourably reviewed in these pages.

The second edition differs in but a few details from its

predecessor. There are some added illustrations, and the Schwartz-Stache operation is discussed in greater detail. In other respects the manual is the same, and giving, as it does, a clear and concise account of the present-day knowledge of the subject of otology, it can be warmly recommended to the notice of students and to those practitioners who have not had the opportunity of practical instruction in the diagnosis and treatment of aural affections.

Diseases of the Nose and Throat. By F. DE HAVILLAND HALL, M.D., and HERBERT TILLEY, M.D. Second Edition. London: H. K. Lewis. 1901.

A Text-book of Diseases of the Nose and Throat. By A. BRADEN KYLE, M.D. Second Edition. London: W. B. Saunders. 1900.

THESE two volumes are second editions of text-books which on their first appearance were reviewed in these pages.

The first, that by Hall and Tilley, forms one of Lewis' "Practical Series." In our former notes on the work, which then bore the name of Havilland Hall, who is a physician, alone, we took occasion to criticise the vague and incomplete directions given regarding treatment, and particularly when surgical measures were under discussion. This defect has been remedied in great part by the introduction of a collaborateur who is a surgeon.

Another defect in a professed "practical" manual, to which attention was drawn in our previous notes, was the loading of the text with references and quotations. These gave the reader the impression that the work was of the nature of a painstaking compilation rather than the fruit of the author's experience. The authors now briefly state in their preface to the second edition, "The references to the various authors quoted in the text have been omitted, as they were considered unnecessary in a practical handbook"!

This second edition is a very great advance on its predecessor, and while there is room for further improvement, it will be found a useful and trustworthy guide. We think that it is now fitted to take its place in a "practical series," and may be safely recommended to students as a text-book on diseases of the nose and throat.

The first edition of Dr. Braden Kyle's volume was very

fully and favourably reviewed in this *Journal* twelve months ago (June, 1900).

The alterations and additions which have been made and now appear in the second edition are insignificant, and in no way alter the character of the work, which is well worthy the attention of all interested in this department of medicine and surgery.

Text-Book of Histology. By DR. PHILIPP STÖHR. Third American, from Eighth German, Edition. Translated by DR. EMMA L. BILSTEIN, Edited by DR. ALFRED SCHÄFER. London: Rebman, Limited. 1901.

THE first American edition of this work was published in June, 1896, but we are told in a footnote that the section on histology in M'Kendrick's *Physiology* (1888) was based largely on Stöhr's text-book.

A second American edition appeared in 1898, and the preface to the present edition is dated December, 1900. These facts testify to the popularity of the work. An important feature is the addition of pages on special technic to the description of microscopic appearances. There is, further, an appendix on microtome technic.

The translation is well done, and the illustrations, 301 in number, are excellent.

A book like this is what one wants in the laboratory, and its practical usefulness is a sufficient explanation of a new edition being called for so soon after the last.

Histology and Pathology: A Manual for Students and Practitioners. By JOHN BENJAMIN NICHOLS, M.D., and FRANK PALMER VALE, M.D. London: Henry Kimpton. 1901.

THIS work is intended to present the essential facts of the title-subjects in "a systematic and concise way"—in other words, we have before us one of those books so much sought after by the majority of students preparing for examination. Taken as such, the volume has merits, and the authors have endeavoured honestly to do each his duty in the part he is responsible for—Dr. Nichols in histology, and Dr. Vale in pathology.

In the euphemistic preface already quoted from, we are warned that "originality of data is little to be expected," and with this fresh in our mind we are agreeably surprised to find that traversing the beaten paths has been made so pleasant by the authors. The text, while not padded, is yet readable to a degree, and the matter is illustrated in a way not found in the ordinary compendium. If not used as a substitute for larger works, the one before us will certainly prove of use to refresh the memory, and to those trudging along the weary road to the examination hall we would recommend the volume as *a bonus comes pro vehiculo*.

When to Operate in Inflammation of the Appendix—Clinical Lectures. By C. MANSELL MOULLIN. Second Edition. London: Bale, Sons & Danielsson. 1901.

IN these four lectures the subject of the operative treatment of appendicitis, and the proper time for intervention, is gone into.

In the first place, simple cases are considered, the rule being laid down that, if symptoms are slight, and clearly brought on by some act of indiscretion, operation is unnecessary, while if the attacks return at comparatively short intervals, there is a permanent cause for them, and the appendix should therefore be removed.

Next, gangrenous appendicitis is considered, and early operation—called by the author "preventive"—is advised. He discusses the arguments against operation in a very fair manner.

The third lecture deals with cases of some severity. The question of operation is answered in the affirmative, the only difficulty being as to the proper time. If constitutional symptoms are grave, or if any one of the chief symptoms is worse in the course of a few hours, then operation should be undertaken at once; if stationary, or if improvement is observed, wait till quiescence occurs, and then operate. "No case can be considered cured so long as the appendix is left behind." Recovery from an attack is not the same as a "cure."

In the concluding lecture individual symptoms, and the opinions deducible from them, are gone into.

We may say of this *brochure* that it places the author's views before us in a plain, straightforward way. These views

are not those of a partisan, but are based on commonsense, and when, as in the third lecture, debateable ground is entered, the author states his case in a manner which must compel the attention of those who hold opposite opinions.

Modern Cremation: Cremation, its History and Practice to the Present Date. By SIR H. THOMPSON, Bart., F.R.C.S., M.B.Lond. Fourth Edition, Revised and Enlarged. London: Smith, Elder & Co. 1901.

As the third edition of this work was reviewed in these pages at considerable length in September, 1899, it is unnecessary to do more at present than to state that some fresh matter has been added, that the history of modern cremation has been brought up to date, that the published price of the book is only two shillings, and that every good citizen and patriot ought to procure the volume and study it.

An Index of Symptoms as a Clue to Diagnosis. By RALPH WINNINGTON LEFTWICH, M.D. Second Edition. London: Smith, Elder & Co. 1901.

THIS is meant to be a time-saving book, and is to help the young physician or clinical clerk when, in a difficulty, he is asking himself the question, "To what disease or condition may this symptom point?" Under headings of practically all the symptoms and signs met with in the practice of medicine are placed lists of diseases in which these subjective and objective phenomena occur. "The order of the symptoms is approximately that in which a case is taken; that of the diseases is roughly alphabetical." There is a good index. The lists of diseases are remarkably free from errors, and they are wonderfully complete—too much so, we think, to be genuinely helpful or suggestive—and we would imagine that the physician or student who turned up (say) albuminuria in the index, could be nothing but bewildered to find a column of forty-one diseases, should he be unaware of the first principles on which such a condition depends; and the same may be said of many other symptoms. In Part VII the different methods of diagnosis are described so shortly and imperfectly as to be often quite useless, and albumen, if in

small quantity, will most certainly be missed should the author's instructions be followed.

At times, however, we believe that this index will be found useful; but, in our opinion, the motive of the book, though undoubtedly novel and unique, is on wrong lines. Such a work is not calculated to assist in forming the thoughtful and thorough physician, and we cannot recommend it to the student of medicine.

Bath Waters: A Rational Account of their Nature and Use.

By PRESTON KING, M.D.Cantab. Bristol: J. W. Arrowsmith. 1901.

IN this little work we have an historical sketch by the Rev. S. Baring-Gould and another by the author. We have then an account of Bath as a modern health resort, and this is followed by a description of the waters and baths, and by some considerations on the principal diseases (rheumatism, gout, and rheumatoid arthritis) for which resort is had to the waters. Some of the illustrations are quaint and interesting.

Gynæcology: A Manual for Students and Practitioners.

By MONTGOMERY A. CROCKETT, M.D. London: Henry Kimpton. 1901.

THIS work is the volume on Gynæcology in Kimpton's "Series of Modern Text-Books." In the preface the author states his aim to be "to present the essential features of a special subject in moderate compass," and this, it may be fairly stated, he has succeeded in doing. Nothing of importance has been overlooked, and yet the book only numbers 351 pages, which include 107 engravings. The teaching is up to date, and the most important operations are clearly, though necessarily briefly, described. We recognise that in a work of this kind, to a great extent, the teaching must be dogmatic, but in the present state of our knowledge to write that "there is no excuse for the intra-abdominal use of any other material than formaldehyde catgut, and the surgeon who exposes his patients to the dangers which follow the use of silk sutures and ligatures should be held responsible for untoward results" is ridiculous. The question of absorbable *versus* non-absorbable sutures seems to be one on which Dr. Crockett has strong

opinions, as he again states, when writing of post-operative hernia, "the use of non-absorbable sutures" (in the deep layers of the abdominal wall) "is to be condemned; they are always dangerous, and after union useless." It has to be added that the editor dissents from these sweeping statements in footnotes, but it would have been much better had he seen his way to have eliminated them.

The book is well printed, and the plates are good, but the binding is very poor.

Atlas of the Nervous System, including an Epitome of the Anatomy, Pathology, and Treatment. By DR. CHRISTFRIED JAKOB, with a Preface by PROFESSOR V. STRUMPELL. Edited by EDWARD D. FISHER, M.D. 112 Coloured Plates and 139 Illustrations. London: W. B. Saunders & Co. 1901.

SAUNDERS' hand atlases have achieved a certain, and on the whole well-deserved, popularity, and the present volume on the anatomy and histology of the central nervous system is likely to prove very useful to students and practitioners. The plates, both of normal and pathological conditions, are well executed, and the letterpress is easy of reference. The epitome on the anatomy and pathology of the nervous system, with its reference to the plates, will also be of service. We recommend the volume.

Modern Surgery. By JOHN B. ROBERTS, M.D. London: Rebman, Limited. 1901.

THE title of this handbook leads one to expect a good deal from the author in his "exposition of the accepted doctrines of the present time." We have read it through carefully, but feel bound to say we are disappointed with it. There is much in it that is quite satisfactory, but throughout the effect is spoiled by the extraordinary verbal contortions employed, and there is a want of method and of that conciseness of description which are essential in a comparatively small book intended for the use of students. The author, very properly, devotes a certain amount of attention to the pathology of the various diseases, but under this heading, in addition to what is ordinarily understood by that term, we sometimes find symptomatology, occasionally differential diagnosis; while at other times, and not very infrequently, there is just a general

discourse where either there has been no time or it has been forgotten to mention the pathology. For example, here is the whole of the "pathology" of lupus—"The disease has an important surgical bearing, because there is a liability of its being confounded with syphilitic and epitheliomatous ulceration. The superficial form of lupus, erythematous lupus, as it is sometimes called, is a different affection from ulcerating lupus; it is a skin disease located especially in the sebaceous glands, and does not interest the surgeon." All very well as far as it goes, but it would have been better had some indication, however brief, been given of those changes met with in that form of lupus which does interest the surgeon.

In his description of syphilis, we notice the author describes a "quaternary" stage of that disease, by which he means what is usually known as congenital syphilis. This surely is altogether a misnomer. There is quite a good chapter on fractures, which are more fully dealt with than any other condition perhaps, but we cannot discover any advantage in omitting the names of Colles or Pott from those fractures usually associated with them. Pott's fracture is a very definite, as well as a very frequent injury, differing in many points from several other types of fracture met with in the same neighbourhood, and it appears to us that there is a great deal in favour of adhering to these non-classical descriptions.

One of the best things in the book is the chapter on plastic surgery. The surgery of the abdomen is also, on the whole, good, though we should have expected a more complete account of appendicitis than we find.

The book is well printed, and the illustrations are numerous and satisfactory, if we except the coloured plates.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Pus in the Stomach.—Strauss relates a case of cancer of the stomach, in the *Berlin. Klin. Woch.*, 36 Jahrg., which presents unusual features. An extensive carcinomatous tumour involved the greater and the lesser curvatures; perforation took place, and a subphrenic abscess formed, extending between

the anterior abdominal wall and the stomach. On introducing a bougie when the patient was fasting, a quantity (30 cc.) of pus, mixed with blood, was suddenly ejected.

A tumour could be plainly made out; it gradually increased in size, and became doughy in consistence towards the end of life. Albumose (Salkowski's test) and indican were found in the urine in considerable quantity. There was leucocytosis. Repeated examination of the contents of the stomach confirmed the presence of pus and blood. The motor activity of that organ was unimpaired. The acidity of the stomach-contents was diminished; they contained fat crystals, minute particles of the carcinomatous growth, and sulphuretted hydrogen.

Apart from phlegmonous gastritis, abscess of the stomach, and purulent inflammation of the upper part of the digestive tract, and abscesses bursting into the stomach, the author has found pus in measureable quantities in cases of carcinoma only, and, as a rule, along with unimpaired motor activity of the stomach. Much the same may be said concerning the presence of blood in appreciable quantity. He also refers to the diagnostic significance of the increased vulnerability of the mucous membrane in this condition. He demonstrates this by carrying out gentle friction movements with the soft stomach tube, and washing out the stomach immediately afterwards; he holds that, if properly carried out, this is not a dangerous procedure, and that it is of diagnostic value in differentiating between carcinoma and that form of chronic catarrh of the stomach in which atrophy of the mucous membrane exists. Contrary to other authors, however, he finds that the vulnerability of the mucous membrane in the latter condition is never increased. —(*Centralblatt f. d. Grenzgebiete der Med. und Chir.*, 3rd April, 1901.)

Sudden (Apoplecticform) Bulbar Paralysis; Hemiplegia; Astereognosis.—Dr. W. E. Paul, of Boston, reports this case in the *Boston Medical and Surgical Journal*, 14th March, 1901. The patient is a woman, 51 years of age. Eleven years previously she suddenly lost the power of speech; soon afterwards her speech returned, and to all appearance she became quite well. A year later she again suddenly lost the power of speech; she stopped short in the middle of a sentence, retaining consciousness however; she felt dizzy, and her left arm became numb and powerless. There was no vomiting. She could not speak plainly, and she was unable to whistle. A measure of improvement took place in all her symptoms, but the numbness in the left arm remained. At the end of three months she was tolerably well, and able to go about.

Ten years later her condition is described as follows:—Her speech is much impaired; she talks in a mumbling fashion; she cannot whistle; and the saliva trickles on to her pillow at night. There is no regurgitation of liquids through the nose. The left arm has a numb and dead-like feeling; she cannot use her left hand for buttoning, lacing her shoes, or any piece of work in which the finer manipulations are required.

There is no history of involvement of any of the cranial nerves, except the hypoglossal and the facial, nor was any history of impairment of motion of the left leg obtained. The patient is well nourished, ruddy, and clear in mind. Her speech is typically bulbar. When at rest her lips appear flaccid; puckering, compression, and separation of the lips are impossible, except to a very slight degree. The risorius muscles, the zygomatici, and other muscles supplied by the seventh nerve are normal. The tongue, when protruded, does not deviate; the tip cannot be directed upwards towards the teeth or palate, nor can the tongue be grooved. The palate-reflex is normal. No sensory disturbance of any of the cranial nerves can be discovered.

The patient grasps as strongly with the left hand as with the right; tactile sensation is, however, slightly blunted over the left hand and fore-arm. The sense of pain, as judged by pinching the skin, is decidedly impaired over the left hand, arm, and shoulder, and left side of the neck. The warm and cold test-tubes were correctly distinguished. When the test with two points was

employed, they required to be widely separated on the left palm and dorsum in order to be individually recognised; the patient also answered less promptly. The sense of pressure is altered, metallic substances being called soft. The sense of locality is normal. A fifty-cent piece, a key, and a knife were not recognised by the left hand, while they were named at once when put into the right hand. The shape of objects placed in the palm of the left hand cannot be described. Fibrillation is absent. Atrophy in moderate degree is observed only in the lips and tongue; there is no atrophy elsewhere.

The knee-jerks are normal; there is no ankle clonus; the plantar reflex is absent in both feet; there is, however, some degree of anæsthesia of the left sole. The pupils are equal, and react to light and accommodation; the visual fields are not limited. Physical examination of the heart, and examination of the urine, reveal nothing abnormal.

The author regards the case as essentially one of bulbar paralysis. The chief peculiarity lies in the mode of onset. He is disposed, however, to place it in the category of the very rare forms of this disease which begin with an apoplectic seizure, and in which there exists a bilateral lesion. Here the bulbar symptoms remained, although a measure of improvement took place during the first two months. He states that, while the nerve-supply of the orbicularis oris is derived from the facial, there is good reason to believe that the nuclear origin of this supply is from the hypoglossal, either by fibres going to the facial nucleus or entering the facial nerve. He considers that the labio-lingual paralysis may be interpreted as depending solely on a lesion of the hypoglossal nuclei. The hemiplegia and astereognosis are difficult of explanation as complications of the bulbar palsy. He cites Gowers' view of the pathology of these cases, and concludes by saying that the lesion here probably extended to the median fillet and pyramidal tract of the right side of the medulla.

Poisoning by Carbon Disulphide.—At a meeting of the Medical Society of Berlin, held on 15th May, 1901, Dr. Mendel described two cases of poisoning by the above substance, and showed the patients. Both were workmen employed in a cable manufactory, and their particular work consisted in the vulcanising of indiarubber. In this process the crude rubber was attached to a cylinder which was drawn through the vulcanising fluid; this fluid contained carbon disulphide. It was seldom that they came actually into contact with the fluid, only when it splashed about them; they were, however, directly exposed to the influence of the vapour emitted.

Both men were 40 years of age; the one had been two and a half years in the cable work, and the other one and a half. In the one case the symptoms began in October, 1900, with an itching sensation in the points of the fingers; in the other, in January, 1901, with a feeling of weight in the feet. This latter symptom was complained of at the same period by the patient first to become affected. Both complained of a feeling of weakness in the arms and of heaviness in the legs; with regard to this latter symptom one said it was as if his feet were being held down by weights.

The condition was limited objectively to both arms or hands, and both feet or legs. In both patients there was pronounced atrophy of the interossei muscles, especially of the right hand, and of the thumb and little finger of the left hand. In one there was an evident paralysis of the extensor digitorum, with drooping of the fourth finger. Electrical examination of the muscles of the upper extremities showed a partial reaction of degeneration, confined to the interossei and the extensor communis digitorum. A similar condition was found in the corresponding muscles of the legs, together with weakness in the peroneal region. The reflexes and the sensory symptoms, with the exception of a small area of hyperalgesia on the outer side of the foot, were normal. The absence of any disturbance of sensibility, of significance, or of pain, on pressure of the peripheral nerves, also the peculiar distribution of the muscular atrophy, lead the author to the conclusion that the process is essentially a poliomyelitis; he deems the symptoms opposed to the view of the condition being one of multiple neuritis, while the electrical reaction does not point in

one direction or another. In support of the view adopted, Dr. Mendel adduces the results of the experiments of Köster, who succeeded in producing in animals an affection of the ganglion cells of the anterior cornua. It is not to be stated with certainty that the posterior roots are not also affected here.

The cases are interesting clinically on account of the relation between the affection of the hands and that of the peronei muscles. It is further remarked that there were, in all, nine men engaged in the same work ill at one and the same time, and that one of them suffered from a mental affection. —(*Deutsche Med. Zeitung*, 23rd May, 1901.)

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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 20TH JULY, 1901.**

	WEEK ENDING			
	June 29.	July 6.	July 13.	July 20.
Mean temperature, . . .	59·7°	No record.	No record.	No record.
Mean range of temperature between day and night, .	12·0°	No record.	No record.	No record.
Number of days on which rain fell, ...	3	3	0	2
Amount of rainfall, . ins.	1·96	0·15	0·0	0·23
Deaths registered, . . .	273	303	253	274
Death-rates, ...	18·6	20·6	17·2	18·6
Zymotic death-rates, . .	3·2	2·9	3·6	4·1
Pulmonary death-rates, .	4·9	5·5	3·8	4·2
DEATHS—				
Under 1 year, ...	60	64	51	68
60 years and upwards, .	50	45	49	42
DEATHS FROM—				
Small-pox, ...	1	1	1	...
Measles, ...	15	16	14	17
Scarlet fever, ...	2	4	5	4
Diphtheria, ...	4	3	2	...
Whooping-cough, . . .	14	12	14	11
Fever, ...	...	...	2	3
Diarrhœa, ...	11	7	15	26
Croup and laryngitis, .	2	2	...	...
Bronchitis, pneumonia, and pleurisy, ...	52	50	33	44
CASES REPORTED—				
Small-pox, ...	3	...	...	...
Diphtheria and membranous croup, ...	17	7	8	11
Erysipelas, ...	25	22	11	18
Scarlet fever, ...	76	58	39	55
Typhus fever, ...	1	1	...	...
Enteric fever, ...	11	17	8	28
Continued fever, . . .	...	...	...	1
Puerperal fever, . . .	1	1	...	...
Measles,*	290	276	189	248

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

SARCOMA OF THE PREVERTEBRAL LYMPHATIC
GLANDS, INVOLVING THE SOLAR AND CÆLIAC
PLEXUSES—SUDDEN DEATH FROM HÆMOR-
RHAGIC PANCREATITIS.

By WILLIAM FINDLAY, M.D.,

AND

JOHN WAINMAN FINDLAY, M.D.

THE following case, which occurred in private practice, seems to us worthy of recording. Its chief interest lies in the obscurity of the cause of illness during life, which, indeed, from the situation of the lesion, is necessarily a characteristic of disease in and around the pancreas. Though the group of symptoms presented during the final weeks of the illness was tolerably complete as representative of pancreatic mischief, we, one and all, failed to take advantage of their guidance; and it was not till after death, when we were fortunate enough to obtain permission to make an examination, that the real causes of the patient's illness and death were ascertained.

L. S., stonemason, aged 62, had for years suffered from chronic bronchitis, which confined him to the house during the

winter and colder spring months. He has also been a victim to "roasting heat" in his lower limbs for even a longer period; this interfered with his rest at nights. According to his own statement, he had, moreover, been a dyspeptic during the latter half of life, but this probably did not mean more than that he had had to be careful of what he ate.

About two years ago, during the course of one of his bronchitic attacks, he suffered from severe vomiting for a few days, the stomach retaining absolutely nothing; and the same thing has happened on two or three occasions since, and before the onset of his final illness.

In October of 1900 he was pretty sharply ill with an acute broncho-pneumonia, lasting about a fortnight. His recovery was slow. In December he began to suffer from sickness and vomiting, with abdominal pains and burnings. For two full months the stomach hardly retained anything. Peptonised milk, somatose, Valentine's beef-juice, brandy and soda, and so on, no matter how small the quantities or how carefully administered, were all but invariably rejected, if not straight-away, then in an hour or two afterwards. During all that time no single day passed without a fit of vomiting. The vomited matter consisted of the food taken and an abundant quantity of glairy mucus, and on one or two occasions there was a little blood. Great pain and frequently tenderness were present in the epigastrium, to the left of the umbilicus, in the right iliac fossa, and round to the right flank; there were also sensations of burning, rising up from the epigastrium and spreading along the sides of the chest to the shoulders. The pain was practically constant, and there were severe paroxysmal exacerbations from time to time.

He never had any jaundice, and the urine was free from sugar and albumen. No tumour could be detected in the belly. There was a marked degree of aortic pulsation in the epigastrium, and what seemed to be aorta was palpable and remarkably tender.

Dr. Middleton and Professor Samson Gemmell saw the patient in consultation, and, though the probability of malignant disease was entertained, no very definite opinion was come to. As the weeks of his final illness advanced, his symptoms became more and more pronounced. There was great and increasing emaciation and weakness, together with powerlessness of his lower limbs, and inability to empty his bladder, the catheter having to be employed for some days before his death. Of drugs, morphia alone gave relief.

On 13th February, 1901, about eight hours before he died, he

was seized with severe paroxysmal pain of a most agonising character in the upper part of the abdomen, and there were tender spots in the epigastrium and right hypochondrium. He rapidly became collapsed, was bathed in a clammy perspiration, had the Hippocratic face, cold extremities, and a rapid, thready pulse. The abdomen was greatly distended and tympanitic, and no liver dulness could be obtained on percussion. Morphia hypodermically allayed the pain, but did nothing to avert the fatal issue. Perforative peritonitis, due most probably to the rupture of a malignant ulcer of the stomach, was diagnosed.

A *post-mortem* examination was conducted on the following day, and though there were many points of interest, we will only enumerate the facts which pertain to the subject in hand.

All the intestines, but more especially the transverse colon, are greatly distended with gas. There are no evidences of peritonitis, and the intestines and stomach are free from tumour or ulcer, and present no abnormal features. The stomach is empty, save for a very small quantity of mucus. There is, however, a small, and somewhat lobulated, tumour situated at the upper border of the pancreas. This tumour (measuring $2\frac{1}{2}$ inches transversely, an inch and a half horizontally, and five-eighths of an inch from before backwards) commences about a quarter of an inch to the left of the head of the pancreas, and has invaded the substance of the gland only to a slight extent, but has involved the connective tissue in front of the aorta and around the coeliac axis, and the hepatic and splenic branches of the same. None of these vessels are actually wrought up into tumour tissue, but they are surrounded in such a way as to have the numerous nerve plexuses, which are prolonged along them, permeated and pressed on by the new growth. At the upper end of the tumour remnants of the prevertebral lymph-glands can be made out. The tumour, as a whole, is soft, and the central third is of the consistence of cream.

The pancreas itself is firm and of a dark red colour, while both in the body and the tail extravasations of blood into the areolar tissues of the gland can be made out. Microscopical examination shows that the tumour is a lympho-sarcoma, being made up of small, round cells and a delicate stroma, and the extension of the tumour from the lymph-gland remnant can be traced.

Both in the remnant of lymph-gland and in the tumour

itself there are numerous hæmatoidin granules, and also evidences of more recent hæmorrhages.

The tumour has invaded the pancreas and the connective tissue around, and seems to be spreading by means of the connective tissue spaces and lymph-channels rather than by the blood-vessels.

There is in parts some fibrosis of the pancreas. Extravasated blood is seen in the inter-acinous, and also in the intra-acinous, areas, breaking up the gland, and there are abundant hæmatoidin granules throughout the gland indicating past hæmorrhages. These hæmatoidin granules are present not only between and around, but actually inside, the secreting cells. In parts the pancreatic cells are very granular, and show little capacity for nuclear staining, and osmic acid treatment shows the presence of fatty degeneration. In these areas evidences of hæmorrhage in or around can be detected, and the degenerated or necrotic parts are overrun by leucocytes. There is an endarteritis obliterans of the blood-vessels, and a catarrh of the larger ducts. Sections around the cœliac vessels show that the nerves of the cœliac plexuses are not only surrounded and pressed on by tumour tissue, but that they are actually invaded by it, and an appearance is seen of the round cell infiltration making its way along their sheaths and lymph-spaces.

The cœliac neuralgia that the patient suffered from during life is sufficiently explained by the presence of this tumour around the solar and cœliac plexuses, though past hæmorrhages into the pancreas and into the tumour itself (as evidenced by the hæmatoidin granules) may have aggravated the pain, and give a very definite reason for the exacerbations of suffering from time to time. The constant vomiting, and the severe constitutional disturbance and emaciation, are also explained by this interference with the sympathetic system. The fatal issue, with symptoms of collapse, was caused by an acute hæmorrhagic pancreatitis, as evidenced by the microscopical appearances in the pancreas itself, and it is interesting to know that quite a small hæmorrhage into the pancreas, accompanied by an acute inflammation, may cause death from, we presume, sudden pressure on the solar or cœliac plexuses, just as a blow may bring about the same result.

The symptoms in this case were somewhat similar to those found in tumours of the pancreas, because pancreatic tumours cause symptoms mainly by pressure on the solar and cœliac plexuses. There was no glycosuria in our case in spite of the

fibrosis, destruction of secreting tissue by hæmorrhage, and invasion of the gland by tumour-tissue, for there still remained a considerable amount of active pancreas. Jaundice, a fairly common occurrence in pancreatic tumours, was also absent here, as the tumour did not lie in a position to interfere with the common bile-duct or duodenum.

The fibrosis of the pancreas can be in part accounted for by the presence of endarteritis obliterans in the smaller arteries of the gland. There was, too, considerable arterio-sclerosis throughout the body. Hæmorrhages are frequent from the ill-formed vessels of lympho-sarcomata, and this source for some of the small bleedings in the tumour was found. The actual ruptured vessel or vessels in the pancreas could not be detected.

The principle that new formation of blood-vessels goes hand in hand with arterio-sclerosis has not been departed from here, still it is doubtful if we can say that the new-formed embryonic blood-vessels would more readily succumb to the poison causing the inflammation than the old and diseased vessels. Several observers have found the bacillus coli communis in similar cases, but such could not be discovered here, though numerous large cocci were seen in some of the capillaries.

In conclusion, it may be remarked that distinguished surgeons have performed laparotomies for suspected intestinal obstruction or acute perforative peritonitis, and have found instead hæmorrhagic pancreatitis.

CASE OF DIABETES IN WHICH THREATENED COMA WAS AVERTED UNDER TREATMENT BY INTRA-VEINUS SALINE INJECTIONS.¹

By T. K. MONRO, M.A., M.D.,
Physician to the Glasgow Royal Infirmary.

ROBERT S., æt. 21, carter, was admitted to the Royal Infirmary on 9th October, 1900. He had enjoyed excellent health until two months previously, when he began to suffer from insatiable hunger and thirst, with great increase in the quantity of urine. From that time onwards he lost flesh and strength,

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 5th April, 1901.

and he took to bed about a week before admission. His family history was good. None of his relatives had suffered from diabetes.

On admission the tongue was clean, moist, and pale rather than red. (It was red for a time later on.) The bowels were regular. The heart and lungs were healthy. Nothing abnormal was detected on examination of the abdomen. Ophthalmoscopic examination showed the lenses and fundi to be normal. The temperature was subnormal. There was no cutaneous lesion. The feet were slightly œdematous. The knee-jerks were absent, even with reinforcement.

A few days after admission, and in spite of a partially restricted diet, patient was passing on an average about 205 oz. of urine, of specific gravity 1043, and containing 6,225 grains sugar. After withdrawal of most of the milk, the condition of the urine slowly improved; but patient continued to lose weight, and by 31st October, about three weeks after admission, his weight was 8 st. 10 lb., as against 9 st. 6 lb. on admission. He was passing an average of 116 oz. of urine, of specific gravity 1041, and containing 3,400 grains sugar per diem. Shortly after admission diarrhœa set in, and for some time there were five to seven motions daily. Lead and opium pill was therefore prescribed, and after a week or two the diarrhœa was brought under control, and patient ceased to lose weight.

On 8th November nitrate of uranium was begun, and this was increased later up to 4 grains, by grain doses at a time, with doubtful benefit. About this time it was found that a potato could be added to his diet without harm.

By the beginning of December, the daily average had sunk to 54 oz. urine of specific gravity 1037, and 670 grains sugar. After 7th December, the sugar rapidly diminished, and on different days from this date to 21st December, but not on every day, sugar was completely absent. During this period the urine fluctuated between 36 and 116 oz., but in the main remained nearly as it had been before, or, if anything, was rather more abundant. The striking change in the sugar excretion set in a couple of days after the uranium nitrate was increased from 3 to 4 grains thrice daily, and was associated with certain important symptoms, including anorexia, sickness, vomiting, and abdominal pain. After a temporary recovery, the pain became severe again on the 10th, vomiting recurred, and there was drowsiness for a time in the afternoon.

Almost from the time of admission the urine had contained

a trace of albumen, and no alteration in this respect was noted at this time. The perchloride reaction was not obtained. The pain continued with intermissions or remissions until about 20th December. There was some variation from time to time in the character and distribution of the pain and in the associated symptoms. The pain was commonly most intense about the umbilicus, rather to the left side. It would extend into the left iliac region, and as high as the fifth rib. It was intensified rather than relieved by pressure. It would pass away at times almost completely. It was sometimes associated with vomiting, but there was no pain in the back or head. In the early part of the severe attack of pain on the 16th, the intensity was greatest at the left costal margin, and soon after this patient had to sit up for breath. During this period of orthopnea the nurse counted 120 respirations per minute. The breathing was shallow at the time. Later on in the day patient became very restless and somewhat delirious, and the maximum pain shifted to the umbilicus.

Hypodermic injections of normal saline solution induced distinct though temporary general improvement, and gave relief to the pain. After the second injection, patient fell asleep, but now and then he awakened and cried out with the pain. This continued on the 17th, and on that day, apart from the pain, which was occasionally extreme, there was a varying mental condition, sometimes lethargy or delirium, and sometimes normal intelligence. At midnight an alkaline injection was introduced into the median basilic vein, and this was followed by great improvement as regards pain, breathing, and intelligence, and patient slept well during the night. Next day the pain returned, and vomiting was frequent. The intravenous injection was therefore repeated in the afternoon, and after about an hour the pain abated greatly, and patient fell asleep. After the injections the skin was moist. The injections consisted of equal parts of chloride and bicarbonate of sodium in water (1 dr. of each salt in 1 pint of water), and from 18 to 35 oz. were injected at a time. During the continuance of the serious symptoms there was marked pallor of the face, and this was noted as improved by the injections. Two well recognised features of diabetic coma were present—namely, very obstinate constipation and a highly acid condition of the urine. Even with large doses of alkali, including as much as 1½ oz. of potassium citrate in a day, it was difficult to alkalinify the urine. But after the urine was made alkaline, it very readily decomposed. Similarly, several ounces of a

purgative saline solution and 8 minims croton oil produced only a small liquid motion the next day, and repeated enemata had no result.

On 19th and 20th December patient improved rapidly, and thereafter he quickly gained weight. By 3rd January, his weight was the same as before the onset of the alarming symptoms—namely, 8 st. 11 lb.—and at the end of January and in February, when he left the hospital, he weighed 9 st. 3½ lb., as compared with 9 st. 6 lb. on admission. The treatment in the later part of his residence included opium, arsenic, cod-liver oil, and citrate of potassium.

On 20th December, when the threatening symptoms were finally passing off, no sugar was detected in the urine, which amounted to 40 oz., with specific gravity 1016. Next day the urine measured 36 oz., with specific gravity 1024, and contained a trace of sugar. On the two following days, the urine rose to 130 and 159 oz., containing respectively 1,560 and 1,830 grains of sugar. After some time, by withdrawing the bread and potato that had been allowed, the quantities were reduced to an average of 65 oz., containing 1,344 grains sugar. While the sugar was absent from the urine during the period of serious symptoms, the quantity of urea varied, but in the main tended to be low. The temperature was subnormal throughout his residence, but rose a little in connection with the injections.

Patient was sent to the Convalescent Home on 8th February, cured so far as symptoms were concerned.

He reported himself on 27th February, before resuming his occupation. His weight was then 9 st. 5 lb. He was still free from polyuria, but a specimen of urine obtained had a specific gravity of 1041, and contained 34 grains of sugar per ounce.

The intense epigastric pain, the anorexia, vomiting, obstinate constipation, restlessness, delirium, drowsiness, disturbance of respiration, high acidity of the urine with diminished quantity of sugar, and the subnormal temperature, appear to justify the description of this case as one of threatened diabetic coma. The striking benefit—transient at first, but after a time lasting—obtained by the treatment employed is in favour of this view, and encourages one to employ such procedures in good time, since the outlook, after coma has fully set in, is so nearly hopeless.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

By DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 117.)

II. THE PRESENCE OF BLOOD, PUS, OR OTHER ABNORMAL CONSTITUENTS IN THE URINE

indicates a departure from health only; the situation and the exact nature of the lesion in the urinary tract must be determined by other means.

A. The appearance of *blood in the urine* during micturition is a symptom of a large number of different lesions, and, as seen in surgical practice, may have its origin in any of the divisions of the urinary tract. Hæmaturia may be due to (*a*) lesions of the renal parenchyma or the pelvis; (*b*) disease of the ureters; (*c*) disease of the bladder; (*d*) disease of the prostate; (*e*) disease of the urethra; and (*f*) disease of the testicles.

We may classify the diseases of the kidney commonly associated with blood in the urine under the following heads:—

(1) Traumatic lesions—(*a*) from injury and (*b*) from calculus;
(2) Passive hyperæmia—(*a*) pressure on the renal veins, (*b*) torsion of the renal veins, and (*c*) reflex spasm of arterioles;
(3) Inflammatory hyperæmia—(*a*) nephritis, acute and chronic, (*b*) tuberculous disease, and (*c*) cystic degeneration and hydatids; and (4) Tumours of the kidney.

Considering hæmaturia of a purely surgical nature, it may be said that the presence of blood in the urine indicates disease in some portion of the urinary tract; the red corpuscles may escape from the capillaries of the kidney and become mixed with the urine as it is secreted, or the urine may escape from the collecting tubes of the kidney in the normal state and afterwards become tinged with blood from the calyces, the ureters, or the bladder. How, then, are we to form a differential diagnosis of the source of the hæmorrhage? This may be done in several ways. Firstly, by observing (*a*) the physical characters of the urine and of the blood-clot, (*b*) the admixture of other deposits with the blood, (*c*) the time at which the blood appears in the stream, (*d*) the frequency and duration of the attacks, and (*e*) the effects of movements and

exercise or of complete rest in course of an attack. Secondly, by collecting the urine separately from the two ureters or by observing blood escaping from the orifice of a ureter. Thirdly, by estimating the quantity of hæmoglobin and comparing it with the amount of albumen in the urine. Fourthly, by carefully considering all the other accompanying objective and subjective phenomena.

(a) *Physical examination of the urine and the circumstances connected with the presence of blood in the evacuation.*

—The following questions must be inquired into and answered: What is the colour of the blood? Is it intimately mixed with the urine, and is the whole stream equally coloured? Is the quantity of blood augmented by exercise or diminished by rest? Have clots been seen, and what is their form? Are there tube-casts or blood-casts to be discovered, or are there other deposits found in the urine? Are the attacks frequently repeated and of short duration, or are they protracted?

The colour imparted to the urine by the addition of blood varies greatly in intensity and shade—from a pale rose colour to a bright red like red-currant syrup mixed in water, to a dark red, to a colour simulating porter, or to a brown colouration not unlike coffee. As a general rule, however, it may be stated that the nearer the source of hæmorrhage is to the external orifice of the urethra the less is the blood altered in appearance. Sometimes, however, as in cases of tumour of the kidney, the quantity of blood derived from the organ may be so large in amount and may be expelled so rapidly after it has escaped from the vessels that little change may be observed in its colour. Again, in some cases of rupture of the kidney from direct violence, the urine may be of a bright red colour, the blood having undergone very little change, but if there is no history or symptoms pointing to tumour of the kidney or to rupture of the organ from injury, the above statement may be accepted as correct. On the other hand, when the hæmaturia is of vesical origin the first quantity of urine passed may present a normal appearance, especially if the patient has been for some time at rest in a recumbent posture and the urine is passed while the patient is in bed. In such circumstances, as the bladder empties itself, the urine gradually becomes more and more tinged, till, finally, the last drops evacuated may be almost pure blood. This is to be especially noted in cases of tumour of the bladder and of vesical calculus, also in passive hyperæmia of the bladder. In passive hyperæmia probably the engorgement of the vesical

veins is greatly augmented by the process of muscular contraction, the efflux trunks being compressed by the muscular trabeculæ through which they pass on their way to join the plexus of veins on the serous surface of the bladder. When the bladder is moderately full the veins are distended and gorged with blood, but when an expulsive effort is added to the already considerable tension the weak capillary walls give way and there may be considerable oozing of blood from the mucous surface without the appearance of any gross lesion when the bladder is examined with the cystoscope. As a general rule, in hæmorrhage from the bladder the urine is mixed with a considerable quantity of mucus and is of a bright florid colour; but if long pent up in the viscus it may assume a dark colour dependent upon the reaction of the urine, which in such cases is usually alkaline. When due to vesical calculus the hæmorrhage is increased by exertion, and in cases of tumour of the bladder the bleeding is always worse after an attempt has been made to examine the bladder by instruments. When the blood is from the kidneys or the ureters it is generally intimately mixed with the urine, to which it imparts a dark, smoky colour, unless when the blood issues in considerable quantity from the pelvis of the kidney and flows rapidly along the ureter, distends the bladder, and escapes without undergoing much change. While it is true that usually blood of renal origin is freely mixed with the excretion which presents a smoky or coffee colour, too much importance must not be attached to these appearances, as they do not depend so much upon the source of the blood as upon the reaction of the urine itself—as seen, for example, in cases of enlarged prostate and chronic vesical catarrh.

Blood having escaped from the vessels its fibrous constituents may coagulate into firm clots, which, during their formation, may entangle some of the histological elements of the structures in which they lie, or by their firm appearance, form, or bulk may indicate the source of the hæmorrhage. Clots are seldom noticed in the urine unless in cases of abundant hæmorrhage; they may be few in number, or numerous; generally they are soft in consistence, and when small in size they may be dissolved in the urine, and, consequently, if not looked for immediately after micturition, they may be lost. The form of the clot may be ovoid, or may be long and worm-shaped, or may resemble in appearance a well-gorged leech. As to colour, they are generally dark red, but may vary considerably, sometimes being black, bright red, or they may become partly or wholly discoloured—spotted red in a greyish background or

entirely grey. When the clot is large, the hæmorrhage is usually, but not invariably, from the bladder; the clots may be so huge that they cannot pass along the urethra without being broken up either by the repeated contraction of the bladder or by means of instruments. These clots are generally very irregular in form and size; they may be so large as to be described by the patient as like masses of liver, but here again a conclusion must not be drawn from the size and appearance of the clot.

It is generally said, and probably truly said, that these large masses of blood-clot are due to a vesical lesion, but many cases have been recorded where large clots have been formed in the bladder and evacuated where the hæmorrhage has been clearly due to a renal lesion. The coagulum may make a complete cast of the pelvis or of the calyces. Rounded clots corresponding to the diameter of the ureter may escape, or leech-like ovoid casts may be taken of the first part of the urethra, or long bougie-like coagula from its anterior part. While the presence of considerable clots is usually, though not always, conclusively against the idea of the hæmorrhage being from the secreting substance of the kidney, the absence of clots visible to the eye proves nothing. If the passage of a long worm-shaped blood-clot is preceded by a temporary cessation of the hæmaturia, and its escape followed by a recurrence of the bleeding, this proves almost to demonstration that the clot has been plugging one ureter, and if in addition the clot is of such a size as to support the idea of being a mould of the ureter, the evidence is conclusive as to the source of the hæmorrhage. The hæmorrhage has been from the kidney, and blood has coagulated in the ureter and has completely plugged it; the coagulum has then become shrunken, while, at the same time, an accumulation of urine has taken place in the pelvis and caused dilatation of the ureter until a point has been reached where the onward pressure from above has become so great that the clot has been forced out into the bladder along with an accumulation of blood-stained urine.

The microscopic appearance of these clots varies according to their age and the changes they have undergone since coagulation has occurred. If the clot is freshly formed, the blood corpuscles present practically a normal appearance, and are seen to be well coloured and embedded in an amorphous or slightly granular matrix of fibrin; but if the clot be old, and especially if it be small in size, the hæmoglobin will be seen to have dissolved out and the red blood corpuscles to be represented only by little colourless rings from 3 to 5 micro-

millimetres in diameter. These fragments of discoloured coagulated blood have sometimes been mistaken by microscopists for portions of tumours.

The size of the cells, however, and the absence of nuclei, as well as the behaviour of sections when acted upon by staining agents, clear up the diagnosis. In certain cases, on examination with the cystoscope, one ureter may be seen to be blocked by a coagulum which protrudes from the orifice of the ureter and hangs into the bladder, not unlike a small worm hanging from the end of a fishing hook. It is generally of a dark reddish-grey colour and firm consistence. In a case observed by the writer, the clot was so firm that the movements of the cystoscope disturbed it, and its dislodgment was immediately followed by a copious flow of blood from the previously obstructed ureter.

In renal hæmaturia minute coagula, casts of the uriniferous tubules, may be discovered in the urinary sediment by the microscope, and may give evidence by their form and shape whence they are derived. In this form of hæmaturia the number of blood corpuscles is no criterion of the quantity of albumen in the urine, whereas, in hæmorrhage from the conducting or collecting portions of the urinary tract, provided there is no pus in the urine, the number of red corpuscles or the amount of hæmoglobin may be accepted as the measure of the quantity of albumen contained in the excretion.

(b) *The admixture of other deposits with the blood.*—In many cases of hæmaturia the only abnormal constituent in the urine is blood, while in other cases it is mixed with pus, mucus, tuberculous material, portions of tumours, or micro-organisms, the detection of which throws considerable light on the etiology of the malady. The mixture of the blood with deposits of another kind requires only to be mentioned here. A detailed description of the various deposits which may be found will be discussed further on. The three most common, however, may be mentioned, namely, pus, mucus, and tuberculous debris. If the urine is placed in a conical glass and allowed to stand for a few hours, and the glass is then held up to the light, if pus be present in any great amount the deposits will be found in distinct layers like geological strata; the bottom of the glass is occupied by a yellowish deposit which may be more or less blood-stained pus, or, in some cases of renal pyuria, the pus may carry down almost all the blood corpuscles so as to leave an almost quite clear supernatant fluid. When mucus is present, on the other hand, not uncommonly the

blood corpuscles may be thrown down first, forming a layer at the bottom of the vessel, and following on this may be seen a layer of glairy gelatinous material, which may have a reddish tint or may contain a multitude of minute bloody streaks which intersect it and penetrate into all parts of this gelatinous layer. In such cases the hæmorrhage is usually due to some lesion in the bladder, and the presence of such an amount of mucus is generally indicative of a more or less acute vesical catarrh.

The tuberculous deposit can only be distinguished by microscopic examination, by the cultivation of tuberculous bacilli, or by inoculation experiments. Beyond demonstrating the presence of blood-casts of the uriniferous tubules, the microscope may reveal the existence of other elements of consequence in the deposit. For example, the character of the epithelium as derived from the renal parenchyma, from the pelvis, the ureter, or the bladder may greatly assist one in diagnosis; or, on the other hand, should the urine contain small fragments of tumours, parasites, or bacteria, the hæmorrhage may be explained.

(c) *The time at which the blood appears in the stream.*—In order to ascertain the precise moment at which the blood appears in the stream, it is necessary for the surgeon to see the patient urinate, and to observe whether the colouration is equal during the whole continuance of micturition, or is more abundant at the beginning or at the end of the act. The appearance of blood at the beginning of micturition, the remainder of the flow being clear, may be an indication of two distinct conditions—the lesion is either in the prostate, close to the neck of the bladder, or a malady or injury is present in the urethra.

In some lesions of the prostate the blood may pass into the urethra, and accumulate there; so also in lesions of the first portion of the urethra the blood may flow backwards into the bladder and mix with its contents. When the blood originates in the urethra and accumulates there, or when it escapes from the prostate and flows into the urethra, the hæmaturia is limited to the beginning of micturition, but if the quantity of blood be great and flows backward into the bladder and mixes with its contents, then the whole of the urine becomes more or less coloured. Again, in a lesion at the neck of the bladder giving rise to hæmorrhage the hæmaturia is not limited to the beginning of micturition, but blood is also observed to escape at the end of the act. This is easily explained; between the

acts of urination the blood accumulates in the urethra or close to its internal orifice, and is expelled with the first few drops of urine only, that following being clear, but, again, before complete contraction of the bladder occurs a fresh hæmorrhage is induced, which shows itself in the urine last ejected.

When the hæmorrhage is due to injury or disease of the urethra, the nature of the lesion is generally clearly indicated by the circumstance that the blood is observed to escape quite independently of micturition; sometimes, indeed, blood is seen to flow from the meatus spontaneously. In cases of tumour of the bladder, and also in vesical calculus, the hæmorrhage is most profuse at the end of micturition.

(d) *The frequency and duration of the attacks.*—While nothing absolutely definite can be ascertained by a close observation and study of the frequency and duration of the hæmaturia, still considerable help may be got in this way to aid in a diagnosis. For example, in many cases of renal hæmaturia the blood may suddenly appear and just as suddenly disappear, soon to be followed by a profuse recurrence; such sudden transformations are in some cases accompanied by the expulsion of long worm-shaped clots, and in such instances we may reasonably conclude that the sudden clearing of the urine has been due to the ureter being obstructed. The blood has coagulated within its lumen, and when the clot becomes displaced a fresh, and often apparently very profuse, escape of blood is observed.

The same sudden appearance and disappearance of blood has been observed in cases of movable kidney with torsion of the renal veins; also in cases of renal calculus.

When hæmaturia comes on without being evidently provoked we may generally surmise that the lesion giving rise to it is a serious one, although we may not be able to judge its site. In cases of tumour of the bladder the presence of blood is generally very persistent, without intervals, and of long duration, so that the patient may become very anæmic from loss of blood.

Again, on the other hand, we meet with cases where hæmaturia more or less profuse has recurred at frequent intervals, but the duration of the attacks has been short, and the intervals between them marked by complete absence of any blood in the urine. Sometimes there may be periods of relief extending over several weeks, or even months, and usually any fresh recurrence of bleeding can be explained by excessive exercise or unwonted freedom of movement on the

part of the patient. If these conditions be associated with the absence of vesical symptoms, the strong presumption is in favour of the hæmorrhage being renal in origin, and against the hypothesis that the blood is flowing from an ulcerated surface; the total duration of the symptoms is also an important guide to the benign or malignant nature of the malady giving rise to it. The long presence of a stone in the renal pelvis may, after causing occasional hæmaturia for years, be followed by the formation of a carcinoma.

(e) *The effects of movement or exercise or of complete rest in the course of an attack.*—When complete rest is taken, hæmaturia due to the presence of stone in the renal pelvis, in the bladder, or in the prostate is generally more or less relieved; so also in hæmorrhage observed in cases of movable kidney, or in passive hyperæmia of the kidney resulting from pressure on the renal veins. In such cases it is repeatedly observed that the blood is most abundant in the urine at night when the patient has been taking active exercise during the preceding day, while, at the same time, the pain in the renal region or irritability of the bladder is increased.

It must, however, be also borne in mind, in exceptional instances, that in hæmaturia from an abraded surface, as in carcinomatous or tuberculous ulceration, or in senile prostate, the bleeding occasionally may not be increased by exercise; but, as a rule, if the hæmaturia persists in spite of prolonged rest in bed, and especially when the bleeding is more abundant during the night than at other times, carcinomatous, sarcomatous, or tuberculous ulceration is to be looked for.

2. *By collecting the urine separately from the two ureters or by observing blood escaping from the orifice of a ureter.*—Various procedures have been employed to ascertain whether the blood originates in the bladder or flows into it from one of the kidneys, and methods have also been devised to ascertain the nature of a vesical lesion. Examination of the bladder by means of the sound, the catheter, or with the finger have been at different times suggested and carried out in practice. When one reads Sir Henry Thompson's¹ description of how exploration of the bladder with the finger should be carried out, the marvel is that the injury done to the patient was not appalling. He introduced the *left forefinger into the rectum* as a guide to the incision of the bladder, and when the incision was completed the *same finger (the left index)*, presumably without

¹ *On Tumours of the Bladder*, London, 1884, p. 17.

being cleaned, was used in exploring the bladder. Sir Henry Thompson¹ went further than this, and proposed that portions of a growth might be removed from the main mass by means of a lithotrite and submitted for microscopic examination, surely overlooking the fact that pieces of a growth removed by a crushing instrument must have lost their histological characteristics, and hence been rendered valueless for diagnostic purposes.

Again, Kuster has employed a curette, and Chismore used a calculus aspirator for diagnostic purposes. The use of such imperfect methods is now to be condemned, seeing that we have at our disposal the electric cystoscope and ureter catheters, but in order to employ these instruments the surgeon must educate himself in their use, just as in the use of any other instrument of precision. The cystoscope may be used both in men and women, and when properly employed the examination subjects the patient to very little risk—less, indeed, than the use of a sound. The sound is too frequently employed in cases of hæmaturia. It is only when the bleeding is the result of a vesical calculus, or an enlarged prostate, or an hypertrophy of the bladder that any reliable information can be obtained by the employment of the sound, and when the hæmaturia is due to other lesions much harm may be done by the rough manipulation necessary to examine the bladder with that instrument. The educated use of the cystoscope being more gentle is less dangerous, and it is more valuable, but it should always be used with strictly aseptic precautions. It must be remembered that where the bladder or other portion of the urinary tract is the seat of disease, the risk of septic contamination is much greater than when these parts are normal, and when septic contamination does occur the gravity of the condition is proportionately greater.

By making careful examination with the cystoscope it is usually easy to ascertain whether or not the blood is from the bladder, but in a few instances it is not safe to conclude from the fact of no lesion being observed in the bladder that the hæmaturia is therefore either renal or ureteral in its origin. When, however, the blood is seen by the cystoscope flowing from the orifice of a ureter, or more rarely from both ureters, the observation is of the highest importance as indicating the source from which the blood comes.

Catheterisation of the ureters.—This method of examination is not so necessary in cases of hæmaturia, nor is it so reliable

¹ *Brit. Med. Jour.*, 1890, vol. ii, p. 332.

as in those of pyuria; not necessary because, generally, if the hæmaturia is purely renal, the escape of blood from the ureter can be readily seen by means of the cystoscope, and not reliable because the use of the catheter may cause hæmorrhage.

Catheterisation of the ureter in the female has been much simplified by Kelly, of Baltimore.¹ The essential feature of this method is that of the introduction of a straight speculum into the empty bladder. The walls of the viscus are slightly separated by the position assumed by the patient, the dilatation being such as to bring the orifices of the ureters into view when reflected light is thrown into the bladder by a forehead mirror. Those who desire to catheterise the ureters must carefully study their direction in the various parts of their course, and must always remember that gentle manipulation is of the highest importance. The various instruments employed, and the methods of using them, have been already described. Some surgeons, however, who do not take the trouble to gain the necessary dexterity in the use of such instruments, are apt to condemn them or to entrust them to experts only, but the use of the cystoscope and the catheterising cystoscope will become more general, just as the ophthalmoscope, laryngoscope, and rhinoscope have ultimately asserted their position as aids in diagnosis. In catheterising the ureters, it must be borne in mind that rough introduction of the catheter may of itself lead to hæmorrhage, and certainly this is a drawback to its use, especially when the catheterised ureter is the seat of inflammation. In the female the procedure is easily carried out and the results are tolerably certain, but in the male, even when one succeeds in introducing the catheter into the ureter, it is difficult to say to what degree the results obtained are to be relied upon.

3. *By estimating the quantity of hæmoglobin, and comparing it with the amount of albumen in the urine.*—Urine containing blood is always albuminous, but the relative proportion existing between the red corpuscles and the serum depends upon whether or not the hæmorrhage is associated with inflammation. For example, in acute nephritis the general inflammatory hyperæmia causes large quantities of albumen to pass into the urine independently of the hæmorrhage. The relationship between the quantity of hæmoglobin and the amount of albumen in the urine will therefore aid one in determining the seat of the hæmorrhage. In 1880 the

¹ *Twentieth Century Practice of Medicine*, vol. i, 1895, p. 675.

writer showed at a meeting of the Glasgow Pathological and Clinical Society an apparatus for estimating by a simple method the quantity of hæmoglobin in solution. The quantity of hæmoglobin having been estimated and the amount of albumen determined by one or other of the recognised processes, the two results should be compared. If the ratio of albumen to hæmoglobin is as 1 to 1·6, then it may be concluded that the appearance of albumen is entirely due to the presence of blood; but if the quantity of albumen is much increased beyond the proportion just mentioned, the indication is in favour not only of an independent albuminuria, but also of a renal affection as the cause of the hæmaturia.

4. *By carefully considering all the other objective and subjective phenomena.*—The questions which have been considered up to the present give but a rough sketch, the detail requires to be carefully filled in before the picture is completed. In order to do this the practitioner must consider the most common sources of hæmaturia, and enumerate the various lesions of the kidneys, the ureters, the bladder, the prostate, the urethra, and the testicles which may give rise to the symptom under discussion. It is well always to conform to this rule in going over the etiological factors which have been indicated above.

We will not discuss in detail the individual, but will only make some general remarks as to the characters of the urine in renal hæmaturia.

Placing aside for the present the hæmaturia due to hydatid disease, the renal hæmorrhages of the greatest practical importance from the standpoint of this paper are those arising from injury, renal calculus, tumours of the kidney, and tuberculous disease of that organ. Having determined that the hæmorrhage is not from the lower urinary tract, it remains to ascertain which of those four causes is to blame.

Hæmaturia resulting from *injury* is generally easily diagnosed. The history of a lumbar sprain or of a blow or crush on the loin, indicated perhaps by ecchymosis, leads one to suspect rupture or contusion of the kidney. Severe damage to the kidney may, however, exist independently of any injury to the other abdominal organs and may of itself prove rapidly fatal; but in the great majority of cases there is evidence of violence elsewhere, and there are symptoms of rupture of other internal organs, especially of the spleen and

liver. Generally, there will be marked and rapid collapse, pain in the course of the ureters as well as in the lumbar region, retraction of the testicle, difficulty in micturition, or even anuria.

In cases of *renal calculus*, the most obvious characteristics of this form of hæmaturia are that the bleeding is seldom profuse or obstinate. The blood is generally light in colour and the hæmorrhage is, as a rule, brought on by sudden movements or active exercise, and it is associated generally with severe colicky pain. These circumstances when accompanying or determining the hæmaturia give the symptom its special value. In cases of renal calculus without suppuration, especially if the stone be impacted in the renal substance, the symptoms are not marked; indeed, the only indication of disease may be occasional slight renal pains, with or without hæmaturia, or severe pain may exist for a time and then disappear for a long period. It is in such cases that the diagnosis of renal calculus is difficult, sometimes quite impossible. There may be renal pain, frequent micturition, slight hæmaturia, or even the presence of small quantities of pus in the urine, from an undue increase in the free acid in that excretion or from oxaluria. The habitual deposit of uric acid or oxalate of lime in urines of high specific gravity is often associated with dyspeptic, nervous, and other symptoms strongly suggestive of renal calculus. These may last for long periods, but if suitable treatment be adopted they usually disappear. On the other hand, considerable, sometimes enormous, stones may be discovered in the kidney after death, although no renal disturbance had been known to exist at any period during the life of the patient. This is not uncommonly observed in hospital practice. Under such circumstances the want of knowledge may reasonably be attributed to the carelessness of the patient, but such an explanation cannot be urged for a case which Dickinson describes.

A renal calculus composed of phosphates of magnesia and ammonia, weighing $7\frac{1}{2}$ oz., was taken from the body of a daughter of Sir Richard Steele, in whom during life no symptoms indicated its presence.

In uncomplicated cases of renal calculus the pain is generally dull, or may only amount to a sense of weight in the loin on the affected side. It is, as a rule, inconstant—absent while the patient is at rest, but aggravated on any movement of the body, but especially by jolting movements, such as jumping,

riding, driving, &c. The pain may also vary with posture, one attitude being generally associated with increased discomfort, while another may bring relief. The unpleasant sensations just referred to are for the most part limited to the affected side; they may, however, extend along the course of the ureter to the perineum, the testicle, or down the thigh. But, while this is so, the pain may pass over or even be limited to the opposite renal region.

In non-suppurating cases of calculus hæmaturia is one of the most important symptoms. But while, on the one hand, it may be true to state that of all causes of hæmorrhage from the kidney calculus is the most common; on the other hand, a calculus may occupy the kidney without at any time causing the patient to lose a perceptible quantity of blood. Although constantly present or oft repeated, hæmaturia from calculus is rarely so profuse as to cause marked anæmia. Perhaps the most characteristic feature of calculous hæmaturia, as distinguished from other forms, is its dependence upon movements of the body. Sometimes the appearance of blood or an increase in the hæmorrhage does not immediately follow exercise, but only shows itself after some hours or even days.

Tuberculous disease of the kidney.—In this malady the urine presents very marked variations at the different stages of the malady. In the initial phases of the affection the presence of the virus induces a congested condition of the organ, and hæmorrhages occur which are analogous to the hæmoptyses in the initial stages of pulmonary tuberculosis. When the kidney parenchyma and the calyces become more seriously involved the characteristics of the urine are more distinct, but this is not always the case. The physical characters of the urine are in some instances such that one can with certainty state that the urinary tract is the seat of a tuberculous lesion, while in other cases the excretion may be to no appreciable extent altered from the normal.

Before destructive processes commence within the renal pelvis or substance, traces of albumen and small quantities of blood may be detected, but when the tuberculous deposit has commenced to break down and evacuate into the ureter, the quantity of albumen is increased, the urine is liable after a time to become alkaline, and, along with greater or less quantities of *débris* of renal tissue, pus appears in considerable quantity.

The albuminuria differs from that of Bright's disease in

that the urine is not clear, but contains much mucus, is viscid, cloudy and opaque, and does not contain tube-casts. The deposit contains small caseous masses mixed with renal *débris*, and on standing, although a considerable amount of pus may be precipitated, a certain quantity remains suspended, and imparts a cloudy appearance to the fluid.

It is only in rare instances that profuse hæmaturia occurs in renal tuberculosis. Trautenroth records the case of a woman, aged 24 years, who was the subject of pulmonary tuberculosis in its early stage, but who also suffered from profuse hæmorrhage from a tuberculous kidney, which necessitated nephrectomy. The pelvis of the kidney was filled with coagulated blood, and upon one of the papilli a considerable ulcer was discovered. The parenchyma of the kidney was the seat of a diffuse tuberculosis. The urine before the operation was found to contain tubercle bacilli; the patient made a good recovery.

Routier records a somewhat similar case, where the right kidney was the seat of a large tuberculous ulceration. Severe hæmorrhage occurred, and continued during seventeen days, associated with renal colic; on making pressure over the right kidney, blood was seen to escape from the right ureter by the cystoscope. The kidney was removed, and the patient made a good recovery.

Although much difficulty is often experienced in distinguishing calculous hæmaturia from that caused by tumours, there is still greater care required in the diagnosis between the hæmorrhage of *early tuberculous* disease and that of renal calculus. The symptoms of the two latter conditions are sometimes identical. This is especially so when the patient fails to show any other evidence of tuberculous disease than that revealed by the renal lesion.

In tuberculous disease hæmaturia is frequently absent for long intervals, is seldom so severe as in stone, and is not increased by exercise. In both conditions pus may be mixed with the urine, but while in the latter concretions and gravel may be discovered, in the former careful and repeated search may demonstrate the presence of tuberculous bacilli. In the early stage of tuberculous disease of the kidney the quantity of albumen in the urine is generally in excess of that accounted for by the blood, and in the later stages, when pus appears in considerable quantity, the pus and blood are not so rapidly or so completely precipitated from the urine as in calculous pyelitis. The presence of phthisis pulmonalis, tuberculous disease of bones or joints, of the testicle, the prostate,

the vesiculæ seminales, the mesenteric glands, the intestine, or of the lower urinary tract, may give a clue to the cause of the hæmaturia.

Tumours of the kidney.—Hæmaturia is the most important and significant symptom of malignant disease, especially cancer of the kidney, and tumours of the kidney are nearly always malignant. It is true various forms of fibromata have been recorded, and occasionally an osteoma, a lipoma, an adenoma, and cases of a papilloma have been published from time to time, but they are very rare. In tumours of the kidney hæmaturia takes place in about 25 per cent of cases in children; these are always, or almost always, sarcomata. In adults, about 20 per cent of the cases of malignant disease present hæmaturia as a prominent symptom; these are divided between the sarcomata and the carcinoma. In carcinomata alone 75 per cent of the cases present hæmaturia as a prominent symptom.

Hæmaturia of malignant disease is rarely severe at its early stage, although cases have been recorded in which profuse bleeding occurred. As a rule, however, it is only as the disease advances that the loss of blood attains to such an amount as to form a distinct deposit. When the hæmorrhage has commenced it is more profuse, is steadily progressive, and less transient than when due to other causes, and is generally spontaneous and continuous, although at intervals liable to aggravation. Clots frequently form, and may cause obstruction to the escape of urine through the ureter, bladder, or urethra.

In malignant disease of the kidney, when the tumour is limited to the substance of the organ, the urine is usually perfectly natural, but when the neoplasm has invaded the pelvis, blood-casts, epithelium, and portions of the growth may appear in the excretion. In the early stage of the disease, however, even before any abnormal constituent can be detected in the urine, the patient may experience considerable difficulty in micturition, probably the result of a reflex nervous excitement. In some cases of malignant disease the hæmaturia is a delayed symptom. This is especially so in cases of sarcomata. An enormous, soft, round-celled sarcoma may exist and develop without hæmaturia or any other disturbance in the secretion indicating the locality of the disease.

(To be continued.)

PATENCY OF PERICARDIUM: SOLITARY KIDNEY:
SEPTUM IN URINARY BLADDER.¹

By EDWARD J. PRIMROSE, M.A., M.D.

THE specimens I have to show are from the body of a man, aged 50 to 60, who died at Hartwood Asylum, Lanarkshire, on 25th December, 1900.

He was a very short time there, and had an illness which was characterised by extreme restlessness, low muttering, moderate fever, very quick pulse, and pain in the lower part of the abdomen. On examination *post-mortem* the lungs were congested and emphysematous, and there was bronchiectasis. There was extensive subperitoneal inflammation of the tissues at the brim of the true pelvis on the right side.

On removal of the sternum and cartilages, a large patency was observed in the upper part of the pericardium, measuring vertically $3\frac{1}{2}$ inches, and transversely 3 inches (see Plate 1). The pericardial and pleural surfaces were unusually dry. The structures open to view through the defect in the pericardium were—(1) The aorta from its first appearance anteriorly to about an inch beyond the origin of the left subclavian artery; (2) the pulmonary artery from its origin to its bifurcation, i.e., to immediately below the point aforementioned in the aorta; and (3) the left auricular appendage. By means of the defect, the cavity of the pericardium communicated with that of the left pleura.

Immediately to the left of the appendage the free edge of the pericardium runs up on to the pulmonary artery. The visceral and parietal layers of the pericardium are connected by numerous fibrous bands, and some of these come up from within the sac over the free edge of the patency on the left side. The fibrous tissue at this part is in the form of frills. Similar frills are present immediately above this point between the pulmonary artery and the aorta. At the lowest part of the free edge there is a fine, but strong fibrous band, extending from the under surface vertically downwards to its insertion about 2 inches lower down into the visceral pericardium. Opposite the interventricular septum, and slightly below the auriculo-ventricular grooves, there are thickly set strong fibrous bands, extending between the visceral and parietal

¹ Read at a meeting of the Glasgow Pathological and Clinical Society held on 13th May, 1901.

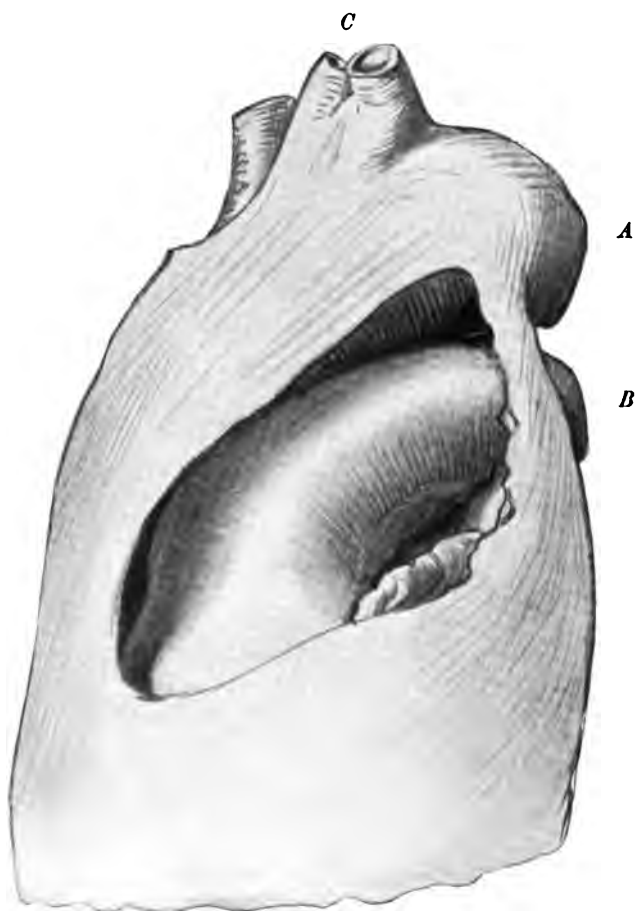


PLATE I.

Patency in pericardial sac, exposing—*A*, aorta; *B*, pulmonary artery with, below it, left auricular appendage; *C*, origin of great vessels from arch of aorta.



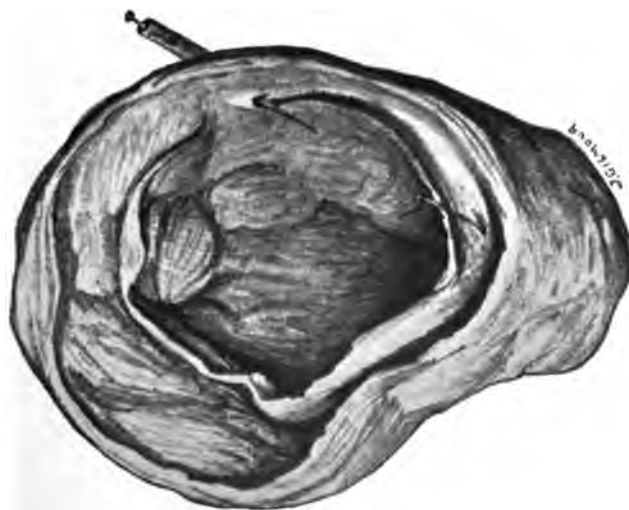


PLATE II.

FIG. 1.—Interior of bladder, viewed from above and in front.
The upper bristle is in the ureter, the lower in the passage communicating with the urethra.

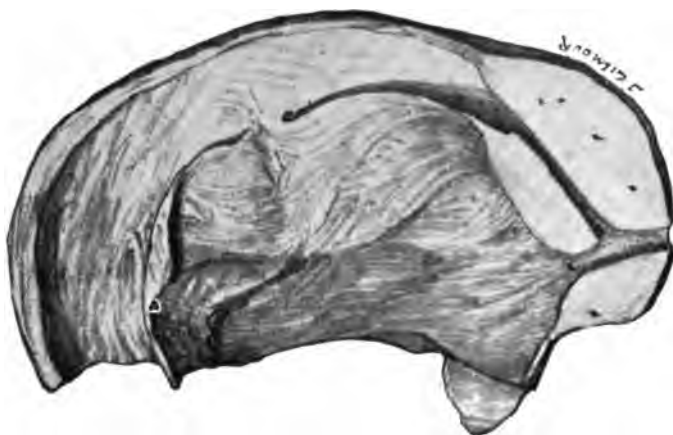
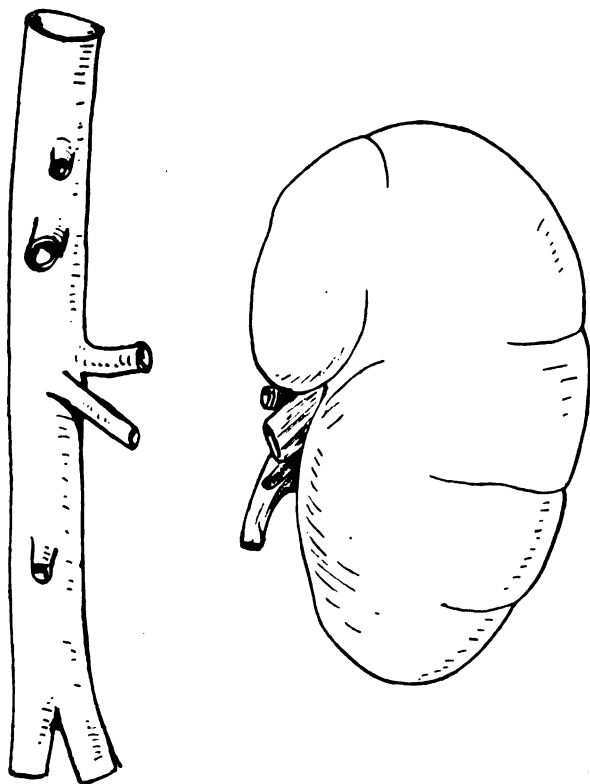


FIG. 2.—Left half of bladder, from within, showing in section, prostate, urethra, communication, and septum.

layers. They occupy a site of three-quarters of an inch vertical measurement.

There are other adhesions not requiring special description.

On proceeding with the examination of the body, it was observed that no kidney was present on the right side. The left kidney, which was large, was removed. This kidney (see illustration) lay in the normal position, was of reni-



form outline, weighed $8\frac{3}{4}$ oz., and measured (after hardening in 10 per cent formalin) $5\frac{1}{4}$ inches in length by $2\frac{3}{4}$ inches in breadth. There was no lobulation, but a mere indication on the stripped surface of seven or eight lobules. The hilus was situated internally, and measured vertically about an inch. The contents were—from before backwards—vein, arteries, ureter. On splitting the kidney the ureter was

seen to divide into an upper and lower branch, and each of these into four calices. A large upper artery divided at its entrance into the hilus into two branches, supplying the upper part of the kidney. A smaller artery supplied the lower portion. The vein divided at its entrance into the hilus in a number of branches. The aorta showed the origin of two renal arteries, both going to the left, of which the upper and larger arose laterally, the lower and smaller anteriorly, in the middle line. The upper divided into two. There was only one vein joining the vena cava. The ureter was single. No vestige of a ureter existed on the right side.

Bladder.—At, and internal to, and below the left ureteral orifice a septum arose, passing round on the left to the anterior wall, and running slightly downwards at the same time (see Plate II, Fig. 1). It was continued anteriorly across to the right side of the viscus, and ended to the right of its commencement on the posterior wall. It thus formed a channel which on the left side was in continuation with the ureter, so that a probe passed up in it ran into the ureter. The channel on the right side ended in a depression immediately to the right of the point of origin of the septum—that is to say, the septum ended on the left side of the posterior wall of the bladder.

In the middle line, in front, a passage conducted from the bottom of this channel into the urethra (see Plate II, Fig. 2).

Behind and below the anterior part of the septum the apex of the bladder cavity communicated with the urethra in the usual manner.

The testicle, vas deferens, and vesicula seminalis were well-developed on the left side. On the right they were all much smaller; on pinching the spermatic cord no cord-like structure could be felt, but, on dissection, the vas deferens was found in it, flat, soft, and only half the size of that on the left side. Both vesiculæ contained seminal fluid with spermatozoa.

The prostate was symmetrical in form and of normal size. The suprarenal bodies were not examined.

Microscopical sections of the septum show that its upper surface is covered with vesical mucous membrane. At the junction with the bladder wall—i.e., at the bottom of the channel—expansions of the mucous membrane form tortuous sinuses. The under surface of the septum is also covered with mucous membrane, but only for a very short distance down, and below this muscular and other tissues abut on the surface more or less perpendicularly.

Sections of the kidney show general engorgement of capillaries and Malpighian tufts, hyaline degeneration of

renal epithelium, effusion of red corpuscles into the stroma in at least one place, and excess of connective tissue. There is also hypertrophy of intima of the vessels. The field ($\times 85$) contains in places nine Malpighian tufts.

With regard to the deficiency of the pericardium, the following reference may be of interest:—

“Complete absence of the pericardium is very rare, except in association with ectocardia or other serious anomaly. Partial defect is sometimes observed, and the only remnant of the pericardium may be found in the form of a sickle-shaped fold attached to the diaphragm, which forms an incomplete sac for the heart. A specimen was described by Dr. Bristowe, in which there was a rudiment of the pericardium at the upper part and right side of the heart. In another case, recorded by Dr. Boxall, the pericardial sac was incomplete, and death was caused by dislocation of the heart during a severe attack of vomiting.”

“The pericardium, in exceptional cases, is the seat of more or less extensive congenital defect. In some instances this is very slight, and of no importance whatever; but there may be a fissure or opening in the sac of sufficient size to allow the heart to protrude through it, constituting a form of *ectopia cordis*. Rarely the defect is so considerable that the organ lies in the left pleural cavity, in contact with the lung, and covered only with the serous visceral layer of the pericardium; while the parietal portion is represented by fringe-like reduplications at the origin of the great vessels, or by ‘a kind of loose-fold or pocket, which is found on the right side or upper part of the heart.’ ‘The defect seems to consist in the pericardium, which is apparently reflected from the external coat of the aorta, not being prolonged so as to cover the front of the heart and become attached to the diaphragm’ (Peacock). Although under ordinary circumstances this last condition cannot be detected during life, it might certainly give rise to unusual and embarrassing signs should inflammation and effusion occur.”¹

In connection with the renal abnormality, it may be mentioned that there are two distinct classes of cases in which the kidney is absent from one side of the body. In that most conveniently described as *fused kidney*, the absent member is found on the opposite side, and more or less fused with its neighbour. In such cases we find that the fused

¹ L. Humphrey in Clifford Allbutt's *System of Medicine*, 1898, vol. v, pp. 713, 729.

mass and the bladder are connected, even when the fusion is most complete, by at least two ureters going to opposite sides of the bladder.

In the other class, that of true *single* or *asymmetrical kidney*, no representative whatever of the absent organ is present, not even on the opposite side. These are cases of congenital absence of one kidney. Examination of the organ present reveals no evidence of reduplication, though often of enlargement, and it is connected with the bladder by a single ureter. In such cases the deficiency may extend to other organs of the genito-urinary system; thus the testicle, vas deferens, and vesicula seminalis may be diminutive or wanting. Allied to this class is that in which a kidney, though present, is *rudimentary*.

The *vascular supply* in all these cases may be, and often is, abnormal; but in any case, the fact of there being two arteries to a single kidney would not in itself suffice to ground upon for an opinion of fusion were there no evidence otherwise of such; even where the number of kidneys is normal, one or both may have more than the usual number of arteries.

The present case affords an example of true single or asymmetrical kidney, or, to describe the pathological condition, of congenital absence of one kidney and ureter, with congenital defect of testis, vas deferens, and vesicula seminalis of the same side. In addition, there is the abnormal vascular supply of two arteries to the enlarged, but normally shaped kidney of the other side.

Taking the renal condition simply, an exactly similar case is reported by Duckworth.¹ The left kidney was absent, and the right kidney was enlarged, and had two arteries, one vein, and one ureter.

There are a number of cases in which the arterial supply of the kidney present was normal. That recorded by Sutherland and Edington²—where a single left kidney, with a single artery and ureter, had the pelvis of the latter made up of two converging tubes—agrees in that detail with the present case.

A case, in which the congenital defect implicated not only the kidney but the whole genito-urinary system, is recorded by Dr. Greenfield,³ in which the right kidney, testis, vas

¹ Duckworth, *Transactions of the Pathological Society of London*, vol. xx.

² Sutherland and Edington, *Glasgow Medical Journal*, February, 1898.

³ Greenfield, *Transactions of the Pathological Society of London*, vol. xxviii.

deferens, and vesicula seminalis were absent, and the sinus pocularis was unilateral, being present on the left side only. The left kidney was enlarged, perhaps from septic bladder mischief.

Cases from congenital *defect*, as distinguished from *total absence*, of one kidney are described. One such, where there was in addition to this a congenital defect of other genito-urinary organs, is recorded by Sutherland and Edington.¹ The left kidney was rudimentary, and had a rudimentary ureter, the left testis was smaller than its neighbour, the vas deferens dwindled away in its course, and the vesicula seminalis was wanting.

Other points of interest in the study of these cases—such as the incidence of age and sex, the form, position, and side affected, the duration of life, the liability of the single kidney to disease, the condition of the adrenal body—are dealt with by Newman,² who records a number of cases, and gives numerous references.

I have not been able to find record of any other case of vesical septum.

CURRENT TOPICS.

ROYAL INFIRMARY.—An extraordinary general meeting of the qualified contributors was held in the Merchants' Hall on Tuesday, 30th July, for the purpose of electing four additional Managers, in accordance with the supplementary charter of May, 1901. The purpose of the additional charter was to add to the present Board of Managers two ladies, and two representatives of bodies of working men who subscribe to the funds of the Infirmary. The following were elected Managers:—Mrs. Mather, 14 Annfield Place; Mrs. Napier, 14 Windsor Circus; Mr. William Binnie, 25 Steven Street; and Mr. James Reilly, 126 London Street.

ROYAL INFIRMARY: APPOINTMENTS.—John Patrick, M.B., C.M., has been appointed Dispensary or Assistant Surgeon. Norman Macnair, B.Sc., M.D., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Extra Dispensary or Assistant Physician.

¹ Sutherland and Edington, *Glasgow Medical Journal*, February, 1898.

² Newman, *Glasgow Hospital Reports*, 1898.

GLASGOW UNIVERSITY: GRADUATION IN MEDICINE.—The summer graduation ceremony took place in the Bute Hall on Tuesday, 23rd July, the Very Rev. Principal Story presiding. After the ceremony, Professor Sir Hector C. Cameron delivered the usual address to the graduates. The following is the list of those who obtained degrees:—

DOCTORS OF MEDICINE (M.D.)

- Thomas Bell, M.B., C.M., Scotland. *Thesis*—"Arsenical Poisoning in Beer Drinkers."
 Thomas Colvin, M.B., C.M., Scotland. *Thesis*—"Notes on an Outbreak of Bubonic Plague in Glasgow in August, 1900, with a Study of Enteric Fever in its Initial Stage, and other Cases that simulated Plague."
 Robert Home Henderson, M.B., C.M., Scotland. *Thesis*—"The Choice of an Anæsthetic."
 John Coulson Howie, M.A., M.B., C.M., Scotland. *Thesis*—"Puerperal Eclampsia, its Symptomatology, Pathology, and Treatment, with Illustrative Cases."
 James Jack, M.B., C.M., Scotland. *Thesis*—"Albuminuria in Pregnancy, with special reference to Puerperal Eclampsia, with Cases."
 George Jubb, M.B., C.M., Scotland. *Thesis*—"Antiseptic Methods in the Treatment of Enteric Fever."
 John Lindsay, M.A., M.B., C.M., Scotland. *Thesis*—"A Study of Atrophic Development."
 Daniel M'Nicol, M.B., C.M., Scotland. *Thesis*—"One Hundred Years of Vaccination."
 William M'Gregor Young, M.A., M.B., C.M., Scotland. *Thesis*—"Ether Anæsthesia."

BACHELORS OF MEDICINE AND MASTERS IN SURGERY
(M.B., C.M.)

- | | |
|-----------------------|----------------------|
| Duncan Davie. | John Poynter Small. |
| William Henry Ferran. | David Wallace Smith. |
| Shusil Kumar Roy. | |

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY
(M.B., CH.B.)I. *Honours.*

- | | |
|--------------------------------------|---------------------------|
| ¹ Alexander Dey Thompson. | William Macalister Brown. |
|--------------------------------------|---------------------------|

II. *Commendation.*

- | | |
|---------------------------|--------------------------|
| James M'Pherson, M.A. | Robert Ramsey. |
| Samuel James Cameron. | Donald Steel. |
| Albert Ernest Wainwright. | James Walker. |
| Edward Magoveny. | William Alexander Milne. |
| Joseph Goodwin Tomkinson. | |

III. *Ordinary Degree.*

- | | |
|------------------------|--------------------------|
| Martha Adams. | John Stoddart Barr. |
| John Anderson. | William Herbert Brown. |
| Thomas Anderson. | George Frederick Buchan. |
| William Archibald. | Ernest Cecil Burnett. |
| James Oastler Barclay. | Patrick Thomas Cairns. |

¹ Mr. Thompson gains the Brunton Memorial Prize of Ten Pounds, awarded to the most distinguished Graduate in Medicine of the year.

Robert David Campbell.
James Bertie Wylie Cook.
Ernest Hamilton Cramb.
Andrew Currie.
David Beattie Davidson.
James Davidson, M.A.
Gregor Hugh Grant Davie.
Alexander Doig.
Reginald Nairn Dunlop.
George Balfour Eadie.
William Elder.
William Watt Farrar.
John Forrest.
John Andrew Garden.
Andrew Parlane Granger.
John Gregor.
Mabel Hardie.
George Pillans Harlan.
Francis Joseph Henry.
Douglas William Hunter.
Matthew Hunter.
William Johnstone Isbister.
Thomas Hamilton Jack.
Daniel Ross Kilpatrick.
David Kyle, M.A.
John Lambie.
Frank Joseph Lochrane.
James William M'Dougall.

Thomas M'Laren.
Hugh Archibald M'Lean.
George Williamson M'Millan.
Jacob Mains.
James Grant Millar.
Robert Joseph Mills.
William Archibald Mills.
Samuel Johnston Moore.
Alice Moorhouse.
Alan Howie Muir.
Robert Paterson.
John Paton.
James King Patrick.
Mary Janet Pirret.
Peter Mackenzie Reid.
William Robertson (Kilmarnock).
Thomas Ritchie Rodger.
Charles James Ross, B.A.
David Shannon.
Agnes Bankier Sloan.
Elizabeth Macfarlane Sloan.
John Strathearn.
James Nathaniel Todd.
John Wright Turner.
Robert Warden Valentine.
George Smith Wallace.
Peter Millar Waugh.
William Webster Watt Wilson.

LECTURES ON GYNÆCOLOGY FOR PRACTITIONERS.—Dr. J. K. Kelly proposes to give three lectures to practitioners in the Royal Infirmary on the afternoons of Saturdays, 14th, 21st, and 28th September, at 4 o'clock. Subject, "The Diagnosis of Pelvic Disease in the Female, with Special Reference to Affections of the Fallopian Tubes." The lectures will be open to medical practitioners on presentation of their cards.

THE FOURTEENTH INTERNATIONAL CONGRESS OF MEDICINE, MADRID, 1903.—The Fourteenth International Congress of Medicine will be held at Madrid from the 23rd to the 30th April, 1903, under the patronage of King Alphonso XIII and the Queen Regent. The subscription is 30 pesetas (equivalent to 24s.) Ladies accompanying members will be able to obtain the privileges of members—*i.e.*, reductions on the Spanish railways, &c., on payment of 12 pesetas (or 10s.) each. The National Committee for Great Britain and Ireland remains the same as at the Paris Congress, Sir William MacCormac, Bart., K.C.B., K.C.V.O., being the President. The Honorary Secretaries are Dr. Percival Horton-Smith, of 15 Upper Brook Street, Grosvenor Square, W., and Mr. D'Arcy Power, F.R.C.S.Eng., of 10A Chandos Street, Cavendish Square, London, W.

MEETINGS OF SOCIETIES.**GLASGOW MEDICO-CHIRURGICAL SOCIETY.**

SESSION 1900-1901.**MEETING XII.—1ST MARCH, 1901.**

*The Vice-President, DR. W. G. DUN, in the Chair.***I.—LARGE POLYPUS OCCUPYING THE NASO-PHARYNX.****BY DR. WALKER DOWNIE.**

Dr. Downie showed a boy, 14 years of age, who was admitted to the Western Infirmary (Ward XXV) on 21st February, 1901. He had complete obstruction of the right naris for many months, and, latterly, the left naris had been similarly affected. This obstructive difficulty was accompanied by frequent tickling cough, shortness of breath on slight exertion, disturbed sleep, during which he snored loudly, and frequent waking up with a sense of suffocation.

There were mucous polypi in the right naris. The naso-pharynx was very completely occupied by a large bluish-grey growth, the lower portion of which, rounded and smooth on the surface, projected below the level of the free border of the soft palate for fully half an inch during quiet respiration. During deep inspiration a much larger portion of the growth was exposed to view. The movements of the tumour were restricted by the completeness with which it filled the naso-pharynx. The opinion was expressed that it was a mucofibrous polypus, and that it sprang from the right side of the vault of the naso-pharynx, and possibly from the near neighbourhood of the posterior nares.

II.—THREE SUCCESSFUL CASES OF COLECTOMY FOR CARCINOMA OF THE COLON.**BY MR. A. E. MAYLARD.**

CASE I.—Mrs. S., æt. 52, was admitted into the Victoria Infirmary on 28th April, 1900, suffering from chronic intestinal.

obstruction. On examination, the patient was found to be very emaciated, and to have been losing flesh for some months. She suffered from constipation, and was vomiting. The abdomen was relaxed, but every few minutes intestinal peristalsis was observed. This peristalsis was accompanied with pain, and with audible sounds of gurgling. A hard nodule could be felt in the left hypochondrium, which appeared freely movable.

On 1st May the first stage of colectomy was performed. The abdomen was opened, and a loop of ascending colon containing the stricture was fixed outside the abdomen. Paul's tube was inserted above the stricture.

On 11th May the exventrated loop was excised, and the skin clamped with Nélaton's enterotome.

In order to close the artificial anus, it was found necessary to subsequently short-circuit by dividing the ileum near the cæcum, closing the distal extremity, and planting the proximal into the transverse colon. The artificial anus was then easily closed, and patient made an uninterrupted recovery.

When last seen (1st March, 1901) she was in excellent health, having put on 25 lb.

CASE II.—Mrs. H., æt. 68, was admitted into the Victoria Infirmary on 5th December, 1900, suffering from symptoms of chronic intestinal obstruction. On admission she was found to be suffering from chronic constipation, with no passage of either fæces or flatus for a week. She was very emaciated, and had great distension of the abdomen. Peristaltic movements were distinctly visible, with accompanying sounds of gurgling. Relief was afforded by a right inguinal colostomy.

On 18th December the first stage of colectomy was performed, a loop of the descending colon, embracing the malignant stricture, being drawn through the wound on the left side. Two days later the loop was excised, and Nélaton's enterotome introduced.

On 23rd January, 1901, the artificial anus was closed.

She left the infirmary on 7th February perfectly well, and when last heard of (28th February) she had put on 9½ lb.

CASE III.—William M., æt 47, was admitted into the Victoria Infirmary on 21st September, 1900, suffering from symptoms of chronic intestinal obstruction. His history was that for some time previously he had had at variable intervals temporary attacks of obstruction, accompanied by vomiting and abdominal pain. He had lost flesh, and was conscious of

failing strength. On admission he was suffering from one of these attacks of obstruction.

As there was some uncertainty as to the situation of the obstruction, a presenting distended loop of gut was opened through an incision in the right iliac region, and relief afforded by the insertion and fixation of a glass drainage-tube. While under the anæsthetic, a tumour could be felt above and to the left of the umbilicus.

On 3rd October the first stage of colectomy was performed. A loop of the transverse colon containing the tumour was with difficulty withdrawn and fixed.

On 10th October the exventrated bowel was excised. Although fæces came freely from the colon, there was still troublesome leakage and irritation of the skin about the enterostomy wound. To close this latter, it was found necessary to excise about 2 inches of the small gut embracing the fistula. The wound healed well, and patient left the hospital with his artificial anus, and greatly improved in health.

When last seen (1st March, 1901) he was in good health, and had put on considerable weight, and now waits the completion of the operation.

Mr. Maylard, in commenting on these cases, said that they were the last three he had operated on for carcinoma coli, and that he was convinced that the safest method of performing colectomy was by separate stages. If primary colectomy—that is to say, excision of the tumour and re-establishment of the continuity of the canal—was ever justifiable, it was only in those favourable cases where there were, and had been, no symptoms of obstruction, and where, therefore, there was no disparity in calibre between the bowel proximal and distal to the seat of disease. He preferred to use Nélaton's enterotome for the removal of the skin, and believed it possible to materially shorten the whole period over which the operation extends by inserting the enterotome when the loop is exventrated.

In cases where it was not found possible, or deemed inadvisable, to exventrate the loop with its diseased portion, short-circuiting, after the method accomplished in Case I, should be executed; that is to say, the ileum should be divided near the cæcum, the distal end closed, and the proximal end planted laterally into a part of the colon beyond the seat of disease. This method of short-circuiting does away with all the inconvenience of an artificial anus. It not only serves to

prevent the possibility of any future obstructive symptoms, but spares the patient for the rest of life from all those annoying and trying conditions associated with involuntary evacuations from the abdominal parietes.

III.—DIGESTION LEUCOCYSTOSIS IN CANCER OF THE STOMACH.

BY DR. CARSTAIRS DOUGLAS.

Dr. Douglas read a paper on digestion leucocystosis in cancer of the stomach. He first described the leucocystosis of digestion in health, pointing out that it was a practically constant phenomenon, and depended for its intensity on the age of the person and the nature of the food, being most marked in infancy and after a meal rich in proteids. In disease of the stomach, it might be absent or feeble. Müller first pointed out, in 1890, that it was frequently absent in cancer of the stomach; and some years later, Schneyer, Hartung, and others applied this point clinically to the differential diagnosis of cancer, benign stenosis, and ulcer, stating that leucocytosis was almost always absent in cancer as compared with the other diseases. Dr. Douglas, finding that practically no observations on this matter had been published in this country, investigated it in 11 cases of cancer of the stomach, and found that digestion leucocystosis was absent in 6 (54·54 per cent), present in 4 (36·36 per cent), and inconstant in 1 (9 per cent). His figures agree exactly with those of Osler and Macrae, who examined 22 patients for this, and found the phenomenon absent in 12 (54·5 per cent). It appears, therefore, that reliance cannot be placed on this method for diagnosing cancer from other morbid conditions of the stomach.

MEETING XIII.—15TH MARCH, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—WOUND OF THE EXTERNAL ILIAC ARTERY.

BY MR. J. H. PRINGLE.

Mr. Pringle showed a man, æt. 45, who had been admitted to the Glasgow Royal Infirmary on 13th January, 1901, said

to have been stabbed. A small wound was found above Poupart's ligament of the left side, and there was a considerable swelling in the iliac fossa, probably a hæmatoma. It was considered probable that the iliac vessels had been wounded, and, on exposing them, a wound was found in the external iliac artery, which was sutured with catgut. The patient made an uninterrupted recovery, and now presents no signs of any dilatation of the arterial coats or of hernia. The two posterior tibial pulses are equal in volume and force. There is no atrophy of the limb or sense of weakness.

II.—ACUTE INFECTIVE OSTEOMYELITIS OF THE RIGHT TIBIA.

By MR. J. H. PRINGLE.

Mr. Pringle showed also a boy who had been admitted to the Glasgow Royal Infirmary on 31st October, 1898, delirious and with signs of acute infective osteomyelitis of the right tibia. The leg was incised the same evening, and pus evacuated. Later, the whole diaphysis of the tibia was removed; but, in spite of this, pyæmia supervened. After a prolonged illness, during which many abscesses formed and were opened in various parts of the body, the patient recovered. He was shown to the Society chiefly on the account of the fact that a new tibia had developed.

(A full report of the case will be published in a future issue of the *Journal*.)

III.—CASE OF RUPTURED GASTRIC ULCER.

By DR. W. K. HUNTER AND DR. G. H. EDINGTON.

Dr. Hunter said—In bringing this case before the Society, we do so, not because we consider ruptured gastric ulcer a specially rare condition—unfortunately it is not—but because its early diagnosis is sometimes attended with great difficulty. And as this case was to us such an one, we have ventured to report it at the meeting to-night.

The patient was an inmate of the Glasgow Training Home for Nurses, and I saw her for the first time on 14th February, about four o'clock in the afternoon. The story she told was that at half-past nine that morning she felt a very severe pain in the abdomen, at a point to the left of and a little below the umbilicus. There was also some severe pain in the

left shoulder and in the epigastrium, but the epigastric pain seems to have been rather indefinite and uncertain. No cause could be given to explain the sudden onset of the pain, and it had no relation to food.

On inquiry, it was found that for some weeks past the patient had suffered from dyspepsia, there being lack of appetite and pyrosis; but there was no history of pain after food, and there had been no vomiting. Two days before she had felt sick, but did not vomit, and the sickness was supposed to be due to vaccination.

When I saw her the pain in the abdomen was certainly very severe at a point near the umbilicus, as above mentioned. But there was scarce any tenderness to touch at this point, and the rest of the abdomen could all be palpated without evident discomfort, though the abdominal muscles were kept fairly tense. The pain in the left shoulder was also severe, and was complained of just about as much as the pain in the abdomen. The patient lay on her back in bed, and she would not move, either to lie on her side or to sit up. There was no distension of the abdomen, and though the liver area could not be mapped out by percussion, its limits being rather uncertain, yet it was not replaced by a clear tympanitic note.

The temperature at this time was $98^{\circ}4'$, and the pulse 84, and of good quality; and, indeed, except for the very severe pain, the patient seemed quite well. I ordered a quarter of a grain of morphia by the mouth, and as the pain still continued, this was repeated at 10 P.M. I was called again at 3 A.M. the next morning, when the pain was found to be as severe as ever, and especially so in the left shoulder. The temperature was now $99^{\circ}6'$, and the pulse 100, of good quality, and not the least like the pulse of peritonitis. There was no abdominal distension or marked tenderness, but the liver dulness was now practically gone. I ordered more morphia, and that no food of any kind should be given by the mouth.

At 9 A.M. the condition was much the same, the pulse being, if anything, rather softer than during the night, and the temperature $100^{\circ}2'$. The abdomen was slightly distended, and there was no doubt about the absence of liver dulness. Being now thoroughly impressed with the urgency of the condition, I communicated at once with Dr. Edington, the visiting surgeon to the Home, asking him to advise as regards the need of surgical interference. Dr. Edington saw the patient along with Sir Hector Cameron about an hour later, but they both agreed that the symptoms were not sufficiently clear to justify an operation. Later on in the day, however, unmistakable

signs of peritonitis showed themselves, and it was decided that abdominal section was the only chance of recovery. I am sorry Dr. Edington is not here to give you his account of this part of the report, but he has sent me what he has to say on the subject, and I shall now read this to you:—

“Operation, 15th February, 1901.—An incision about 4 inches in length was made in the linea alba, between the umbilicus and the ensiform cartilage. When the peritoneum was opened, much gas, with a disagreeable odour, whistled out. There was considerable thickening and injection of the parietal peritoneum in the upper region of the abdomen, and the peritoneal cavity contained fluid and portions of curdled material. The stomach was drawn down, and on its anterior surface, close to the left costal margin, was a recent exudate of fibrin. This exudate measured some inches square, and surrounded a round opening in the walls of the stomach; a similar exudation was present on the corresponding part of the parietal peritoneum.

“The opening in the stomach wall was clean cut, and had a diameter of slightly over a quarter of an inch. It was easily brought down to the wound, and was situated midway between the greater and lesser curvatures, and somewhat towards the cardiac extremity. From it curdled milk and fluid were expelled by the movements of respiration. Surrounding the opening was a thickened ring, evidently an old adhesion; beyond this the stomach wall was healthy. Sponges were packed around the neighbourhood of the rupture. A row of Lembert's sutures were passed in the vertical direction through the healthy wall, so that when tied an infolding of about 2 inches in length was formed in the long axis of the organ.

“A sponge was passed down to the hypogastric region, but it was drawn up again dry, and as it was not considered advisable to prolong the operation further, the abdominal wound was closed in layers. The operation lasted about fifty minutes, and at its close the patient's pulse had improved.

“She spent a fairly comfortable night, but suffered a good deal from flatulence. Feeding was entirely rectal. At 4 P.M. on the following day she had a saline transfusion of 1 pint into the submammary region. Her pulse was slightly, if at all, bettered by this, nor was her thirst relieved. Later on she began to vomit small quantities of coffee-ground-like material, and, in spite of treatment, this continued.

“On the following day the abdominal wound was dressed. A stitch was removed from the skin, and some watery fluid

escaped with a disagreeable odour. The liver dulness was still obscured, and she gradually sank. Death at twelve midnight on 17th February, forty-eight hours after the operation.

"I have to express my thanks to Dr. Rutherford for his friendly assistance at the operation."

This is the third case of ruptured gastric ulcer that has come under my care, and now, even more than before, I am impressed with the difficulty of early diagnosis in such cases. In the first case (reported at a meeting of the Society in December, 1898) the diagnosis was comparatively easy; but what was not thought of, even at the operation, was a second ulcer, on the posterior wall of the stomach, which was revealed in the *post-mortem* three weeks later.

The second case occurred last September, when I was on duty in Dr. Steven's ward in the Royal Infirmary. There was a history of pain in epigastrium after food, with occasional vomiting, extending over a period of three years. After dinner the patient felt sick, and lay down in bed. An hour later vomiting came on, and was accompanied with very severe pain in the epigastrium. There was pain in both shoulders, especially the right, and between the shoulders. Vomiting continued for twelve hours, by which time the patient seems to have been pretty well under the influence of opium. This all took place on the 4th inst., and the patient was admitted to hospital two days later as a case of peritonitis.

On admission, the temperature was 102°, pulse 108, respirations 44, and there were no symptoms such as to demand the use of opiates, and, indeed, the case was taken to be one of simple peritonitis. I saw her for the first time the next morning, the fourth day of illness, and there was then nothing special in the patient's appearance to suggest any grave abdominal disorder. The temperature registered 99.2°, pulse 120 and regular, but rather small and wiry. The tongue was dry and coated. There was no distension of the abdomen, and no great degree of tenderness on palpation, except in the epigastric region, where tenderness was very marked. No complaint was made of the weight of the bedclothes, and the knees were not kept drawn up. There was a tympanitic note all over the abdomen, and it extended over the hepatic area, merging at the level of the sixth rib into the thoracic percussion note.

At the operation, a few hours later, a small ulcer was

found in the anterior wall of the stomach. It was surrounded by masses of lymph, which seemed of much longer duration than the recent symptoms would have pointed to. The peritonitis was limited to an area in front of, and extending a little below, the normal gastric area. The patient died within forty-eight hours of the operation.

IV.—CONCLUSION OF THE CASE OF SARCOMA OF THE INFRA-
SPINATUS MUSCLE SHOWN IN A FORMER SESSION.

By DR. G. H. EDINGTON.

At a meeting of this Society on 7th May, 1897,¹ I showed a female patient, aged 8 years, on whom I had performed excision of the left scapula for a sarcoma involving the infraspinatus muscle five months previously. The girl had good use of the limb, except in so far as movements of the shoulder-joint were concerned.

The tumour was examined by Dr. L. R. Sutherland, and, while composed for the most part of spindle-cells, it presented also some round cells and multinucleated masses of protoplasm.

In the further course of the case obscure pains and weakness in the back were complained of; these proved to be temporary, examination was negative in result, and as she was of a neurotic habit, the question of recurrence was dismissed.

She remained well till December, 1897, when she suffered from cough; examination of the chest showed no evidence of disease. In April, 1898, she still had cough, accompanied by expectoration, and she complained of pain in the left side of the chest and in the occipital region. On auscultation, the respiratory murmur was found to be coarse at both bases. There was also dulness over the left base posteriorly, and about half-way down in the axillary line the respiratory murmur had a "cog-wheel" character.

From 14th to 18th May she had hæmoptysis; she also complained of "cramps" in the abdomen; and on 21st some distension was observed. On movement, she kept the spinal column rigid. On 27th, effusion in left pleural sac was noted, the superficial veins of left side of the chest were distended, and respiration was gasping. Death occurred on the following day (28th May, 1898), just seventeen months after the operation.

¹ *Transactions*, vol. i, p. 339.

A *post-mortem* examination was made by Dr. Sutherland and myself. The following is a summary of the condition found:—

Great emaciation; abdomen prominent and tense, containing about 2½ gallons of dark red fluid, with flakes of fibrin and small masses of tumour-tissue.

Heart.—Tumour-nodules are present in right ventricular wall and in septum ventriculorum, bulging into right and left ventricles respectively.

Left pleural cavity contains about a pint of turbid, blood-stained fluid in lower and back part. *Lung* adherent in lower lobe to chest wall by thick masses of tough fibrin; this lobe is collapsed, and beset by numerous nodules of tumour-tissue. The upper lobe is transformed into a bulky, solid mass, and there is also a glandular mass above the main bronchus. The tumour-tissue shows evidence of necrosis.

Right pleural cavity contains no fluid. *Lung* is adherent by fibrous tissue at anterior extremity of middle lobe. A few small tumour-nodules are found superficially and in the substance of the organ. Otherwise the lung-tissue is crepitant, and slightly cedematous in lower lobe. One bronchial gland is pigmented, and shows calcification.

Occupying the fifth intercostal space on right side, near the costo-chondral articulation, is a tumour, about the size of a walnut, which bulges the costal pleura.

Abdomen.—Marked sarcomatous involvement of the omentum, which formed bulky, vascular, stringy masses. Intestinal coils were adherent to each other, and to under surface of liver on right side. The abdominal glands generally were enlarged.

Spleen free from tumour.

Left kidney.—On anterior aspect, near the hilum, is a nodule as large as an almond. *Adrenal* shows a number of tumours intimately connected with large glandular masses at hilum.

Right kidney.—Surmounted by a large, soft, semi-fluctuant tumour-mass adherent to under surface of right lobe of liver.

Pancreas.—Formed a soft, bulky tumour-mass, involving mainly the body and tail, and in which pancreatic tissue was still recognisable.

Stomach.—Numerous small nodules on serous surface, as also on the *intestines*. Mucous membrane free.

Liver.—Adherent to diaphragm and to right adrenal mass by tumour-tissue. Tumours are present both in substance and on its surface.

Diaphragm.—Shows nodules on under surface, and also a general infiltration of the surface.

Considerable quantity of tumour-tissue in pouch of Douglas, and a mass is found in right ovary.

Vertebral column.—From anterior surface of body of last lumbar vertebra and of sacral vertebræ masses project, all to left of middle line.

Microscopical sections have been prepared by Dr. M. L. Taylor, who will now describe their characters:—

“Sections for microscopical examination have been prepared from the following secondary tumours, viz., those in the heart wall, suprarenal body, retro-peritoneal gland, ovary, intestine, lung, and intercostal muscle.

“Professor Sutherland’s description of the microscopical appearances of the primary growth would apply very well, with a few alterations, to the secondary growths. The tumour in the infraspinatus muscle was a mixed-celled sarcoma, in which spindle-cells predominated, and the secondary tumours are also found to be mixed-celled sarcomata, though considerable variety in the predominating elements exists. In the nodule in the heart wall spindle-cells are present in very large numbers, and they show great variety in their sizes, some being extremely large, while others, again, are comparatively small. The very large ones are probably altered muscle fibres, as in some of them a faint transverse striation can still be seen. Multinucleated giant-cells are also present, though not in large numbers. The appearance of the growth in the suprarenal body is striking, as contrasted with that in the heart. Here the giant-cells largely predominate; in some parts no other form of cell is to be seen, and where spindle-cells occur they are only in isolated strands. Some of these giant-cells have no nuclei, and appear to be simply masses of protoplasm. They are mentioned by Professor Sutherland as occurring in the peripheral portions of the original growth. Necrosis has occurred in places throughout this suprarenal tumour.

“In the growths in the retro-peritoneal gland, ovary, and intestine the spindle-cells predominate, very few round-cells being seen; whereas, in the tumours in the lung and intercostal muscle round-cells and spindle-cells are present in almost equal numbers. The fact that so many variations have occurred in the microscopical appearances of the secondary tumours, as compared with the primary one, is quite in accordance with the growth of some sarcomas. Here the

original growth was mixed-celled, with spindle-cells predominating, and in the secondary tumours all gradations are seen from a nearly pure spindle-celled growth to an almost pure round-celled one."

Note by Dr. Edington.—The clinical facts lead me to consider that we have had in this case a primary tumour in the scapular region, with metastatic infection of the viscera. If the adrenals had been the primary source of the disease, it is, I think, unlikely that there would have been for so long no sign on physical examination of the abdomen,

The primary tumour corresponds both in situation and microscopical characters with what Senn¹ describes as "fascial sarcoma." In such, both round and spindle-cells "may occur in the same tumour. In some of the soft tumours the round cells are unusually large and multinuclear. . . . Fascial sarcoma in children is an exceedingly malignant tumour."

V.—NOTES ON THE CONCLUSION OF A CASE OF TUBERCULOSIS OF THE WRIST-JOINT.

BY DR. G. H. EDINGTON.

On 6th May, 1898,² I showed to the Society a man, aged 43, in whom I had excised the wrist for tuberculosis. The operation was performed on 11th September, 1897, and six months later he was able to resume his occupation, which was that of a potter. For a period of fifteen months previous to the operation he had been unable to work. Although he suffered from a slight cough, there was no sign of tuberculosis in the lungs, and the prognosis was considered favourable.

He continued to report himself from time to time. The cough persisted, but at no time could I discover evidence of pulmonary tuberculosis. He remained at his work from March, 1897, till 4th October, 1899. On the 5th he had a severe hæmoptysis—a "gush of blood." He became unconscious, but rallied. On the 6th, however, the hæmoptysis recurred, and "choked" him.

That the case should have terminated with pulmonary manifestations is not surprising. Watson Cheyne³ mentions diseases of the wrist-joint as especially apt to be accompanied

¹ *Pathological and Surgical Treatment of Tumours*, second edition, 1900, p. 578, 579.

² *Transactions*, vol. ii, p. 178.

³ *Tuberculous Disease of Bones and Joints*, Edinburgh, 1895, p. 316.

by phthisis. It was in view of this that I made repeated examinations of the chest, but the sudden termination was unexpected, in face of the negative results of these examinations.

VI.—LARGE FIBROUS POLYPUS OCCUPYING THE NASO-PHARYNX.

BY DR. WALKER DOWNIE.

At last meeting Dr. Downie showed a boy, 14 years of age, whose naso-pharynx was filled by a large firm growth, which blocked both posterior nares.

On the following morning the boy was placed under chloroform, and the growth removed by means of a cold wire snare introduced through the mouth. Its removal, though carried out slowly, and by torsion rather than by cutting, was followed by very profuse hæmorrhage, which was checked by pressure exerted by long strips of lint packed firmly into the naso-pharynx through the mouth and through both nares.

The growth, which was an unusually large one, was, on microscopic section, found to be a very dense fibrous tumour.

MEETING XIV.—5TH APRIL, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—CASE OF IRREGULAR MOVEMENTS OF THE RIGHT HAND AND LEG IN A PATIENT OF MIDDLE AGE, APPARENTLY REFERABLE TO SLIGHT HEMIPLEGIA.

BY DR. T. K. MONRO AND DR. A. GALBRAITH FAULDS.

Dr. Monroe and Dr. Faulds' paper will be found as an original article in our issue for May, 1901, at p. 321.

II.—CASE OF DIABETES IN WHICH THREATENED COMA WAS AVERTED UNDER TREATMENT BY INTRAVENOUS SALINE INJECTIONS.

BY DR. T. K. MONRO.

Dr. Monroe's paper appears as an original article at p. 165.

III.—CASE OF MALIGNANT DISEASE OF THE DESCENDING COLON
TREATED SUCCESSFULLY BY OPERATION.

BY DR. DAVID NEWMAN.

J. M., aged 39, began to complain of vague and uncertain abdominal symptoms in September, 1900. At first only discomfort was complained of, but latterly he had considerable pain throughout the abdomen. The progress of the disease was at first insidious, sometimes the patient complaining of diarrhoea, at other times of constipation, but at no time was blood observed to be present in the evacuations. He complained of occasional sharp pain in the left iliac region, occasionally amounting to a burning sensation, especially after movement of the bowels. Towards the end of December distension of the abdomen became a prominent feature, and at this time considerable difficulty was experienced in producing a movement of the bowels. At the end of December, 1900, he consulted Dr. Herbertson, of Johnstone, who discovered a swelling in the left groin, freely movable and painful on pressure, and he came to the opinion that there was a tumour in the lower part of the descending colon. The patient was sent to Dr. Newman, and he concurred in Dr. Herbertson's diagnosis, but was disposed to believe that the swelling was partly the result of a faecal accumulation above the tumour.

The patient was admitted to the "Central Home" for observation on 7th January, 1901. Under treatment by laxatives the swelling in the left groin was greatly diminished, the abdomen became flat, and the patient was generally relieved from suffering; but, notwithstanding the continuance of the treatment until 21st January, a small firm mass remained. It was situated about 2 inches above Poupart's ligament, and 2 inches within the anterior superior spinous process of the left ileum. The mass, which was about the size of a large walnut, was freely movable, slightly nodulated, and did not alter its form on pressure.

On 21st January an exploratory incision was made over the swelling. On opening the peritoneal cavity the lower part of the descending colon was exposed, and found to contain in its walls a nodulated tumour, an inch and a half in length, and involving the whole circumference of the gut. The upper and lower ends of the colon were clamped, 4 inches of the bowel resected, and an end to end anastomosis was made by introducing a large-sized Murphy's button; and by suturing over the button, an additional security was obtained.

The approximation of the two segments of bowel was accomplished without much dragging. The Murphy's button came away on the eighth day, and the patient made a good recovery.

On microscopic examination the tumour proved to be an epithelioma, and the bowel was so completely occluded by it that only a No. 12 bougie could be passed through the opening.

The patient, who is now in America, reported himself well in August, 1901.

IV.—CASE OF STRICTURE OF THE UPPER END OF THE ŒSOPHAGUS
WHERE GASTROSTOMY AND SUBSEQUENTLY TRACHEOTOMY
WERE PERFORMED.

BY DR. DAVID NEWMAN.

Mrs. W., aged 35, a delicate-looking woman, enjoyed good health until the beginning of summer, 1900. In June she suffered from a sore throat, the description of which was vague. In August the pain in the throat became associated with difficulty in swallowing, culminating in complete dysphagia in the beginning of September. From that time until 8th October, when first seen by Dr. Newman, along with Dr. Ross, of Chryston, she had been nourished entirely by rectal feeding. When first examined the patient was extremely emaciated, pale, and very weak; pulse poor (75); respirations, 22 per minute. Examination of the throat by the mouth revealed some hyperæmia of the pharynx, the larynx was free from disease, but on palpating the neck a hard, firm swelling was detected immediately behind the thyroid cartilage, involving the upper part of the Œsophagus, and on attempting to pass a small bougie, obstruction was found to be complete. The patient was so weak that the advisability of performing a gastrostomy was doubtful. She was, however, admitted to the "Central Home" on 8th October, and as a last resource gastrostomy was performed, and the stomach opened on the third day after being exposed.

The incision was made through the abdominal parietes, an inch below and parallel to the left costal cartilages. It was an inch and a half long, and extended outwards and downwards from the margin of the left rectus muscle. A couple of square inches of the stomach wall was dragged through the incision in the parietes, and a circle of sutures, each including about one-third of an inch of the stomach wall, was passed through the serous and muscular coats. The radius of this circle was

about one-third of an inch. Each suture overlapped its neighbour by about one-sixteenth of an inch, so that when they were all introduced they resembled in form the tyre of a wheel. After all the sutures had been inserted in the stomach wall, the free ends were passed through the subcutaneous tissue and skin only, and tied externally, so that when the operation was completed, an area of stomach wall about the size of a shilling was exposed to view. Through the centre of this area two silver sutures were passed, parallel to one another, and about a third of an inch apart. This method of stitching, by which the peritoneum and muscular tissue were left free, and in full contact with the wall of the stomach, gives a broad base for adhesions, and ensures the formation of a complete sphincter. In making the incision through the parietes, the fasciæ only were divided by the knife; the muscular fibres were separated with a director, not cut across. In this way they also act the part of sphincters.

Between the date of operation and 20th November the patient made comparatively slow progress, although she certainly gained strength. The tumour in the œsophagus remained practically stationary. In the hope that some improvement might take place by her returning home, she was dismissed on 20th November.

On 28th December, Dr. Newman was again asked to see her, when it was found that the growth in the upper part of œsophagus was pressing upon the larynx to such an extent as to impede respiration. Tracheotomy was therefore performed on 7th January, and the patient lived until 8th April, 1901. The situation of the growth in this case gave rise to the hope that the radical operation of œsophagectomy might be resorted to if the patient's strength had materially improved; but she had so long been subjected to complete stenosis, and her strength thereby reduced, that she was unable to recover sufficiently to justify such an operation, associated as it is with considerable shock. The gastrostomy and subsequent tracheotomy prolonged her life by six months, but at no period in the course of that time had her strength improved sufficiently to justify the immediate risks of an œsophagectomy.

V.—FURUNCULOSIS OF THE EXTERNAL AUDITORY CANAL.

BY DR. J. GALBRAITH CONNAL.

Dr. Connal's paper will be found as an original article in our issue for July, 1901, at p. 1.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1900-1901.

MEETING VII.—5TH APRIL, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—TUBERCULOUS KIDNEY REMOVED BY LUMBAR INCISION.

BY MR. H. E. CLARK.

Mr. Clark showed a tuberculous kidney recently removed by lumbar incision. The patient, a woman, aged 37, had been suffering for seven weeks before admission into the Glasgow Royal Infirmary from pain in the left lumbar region and the lower part of the chest of the same side. The attack commenced with a rigor, followed by sweating and marked by much nausea with occasional vomiting. A doctor was called in, who at once diagnosed kidney disease. On admission into hospital on 18th March, her temperature was observed to range from 99.1° to 101.1° F., and her respirations from 24 to 28 per minute. There was found to be a swelling in the left lumbar region which was tender to palpation. There was no distinct fluctuation, and the area of percussion dulness extended upwards as high as the seventh rib. Auscultation showed diminished V.F. and V.R. in the lower part of the chest, with slight friction-sound. The urine varied considerably in quantity from day to day, and on one occasion only 6 oz. were passed in the twenty-four hours. It invariably contained a considerable quantity of pus, and the corpuscles were mixed with a notable amount of epithelial *débris*; bacillus tuberculosis abundant. On 8th April the right ureter was successfully catheterised with Kelly's ureteral catheter, and the urine drawn off was clear, of normal specific gravity, and contained no trace of pus. Under chloroform, the right lumbar region was palpated, and the kidney found to be of normal size and consistence. The left kidney was excised on 10th April by an oblique lumbar incision about 5 inches in length. At the upper part of the organ suppuration had taken place outside the capsule, so that the kidney broke down under the fingers, and the whole operation-cavity became deluged with pus. Notwithstanding this, the kidney was removed without much difficulty, and the pedicle clamped

and tied. The ureter was thickened and dilated as far as it could be traced downwards from the wound; it was ligatured and divided about 3 inches from the kidney. The anterior part of the wound was stitched up and the posterior part packed. Patient stood the operation well, and suffered very little from shock. In the first twenty-four hours after operation, the amount of urine passed was 14 oz., and from that time it steadily increased, until, at the end of a week, it had reached the normal amount, after which a slight degree of polyuria was observed. The kidney removed was hardened in 10 per cent formaline solution, and then divided longitudinally; it showed no recognisable normal kidney structure, the whole organ being converted into a series of sacs filled with tubercular *débris* mixed with true pus. In several places the tubercular invasion had penetrated the whole substance of the kidney and involved the capsule.

Dr. Newman asked if tuberculosis of the wall of the bladder had been observed through the cystoscope.

Mr. Clark answered in the negative. There were signs of irritation, but this was probably due to the presence of the pus.

Dr. Newman said that he had to congratulate *Mr. Clark* on the case, which was a typical one for excision on account of the destruction of the kidney. He would have expected under the circumstances a hypertrophy of the right kidney sufficiently great to have been felt. The fact of the ureter not admitting the catheter showed that thickening of its wall had extended down to its orifice in the bladder. He would ask if it would not have been worth while to dissect it out after the kidney had been removed. Probably, however, the duct would atrophy, and extension to the bladder was not to be expected as it had not already taken place. *Kelly's* speculum had been recommended by *Mr. Clark* for use in the female. He (*Dr. Newman*) had effected an improvement on *Kelly's* instrument. This modification consisted in having the end of the speculum cut obliquely; thus a larger area of bladder-wall was exposed to view. The end of the piston was also made oblique, and was so more easily introduced. He would mention that partial nephrectomy had been done in tuberculous cases. Nowadays, the fear of hæmorrhage was not great, as one could lessen the bleeding by suture and ligature. He had performed the operation in two cases. In one the result had been good, but recurrence took place in the other, and, subsequently, total nephrectomy had to be performed.

In reply, *Mr. Clark* said that it was not possible to remove the ureter completely; the portion in the bladder-wall would require to be left *in situ*.

II.—THREE CASES OF CEREBRAL PALSY.

BY DR. R. BARCLAY NESS.

The three cases shown were taken as examples from a series which had been collected by Dr. Ness at the Dispensary of the Royal Hospital for Sick Children, and which he intends should be presented shortly in a more detailed communication.

The three cases were affected with the condition which has been described under a variety of terms, such as "spastic cerebral palsy," "Little's disease," "cerebral birth paralysis," "cerebral diplegia," &c. The salient feature is spastic paralysis, commonly of the legs (paraplegia), often of both legs and arms (diplegia). In the lower extremities the spasm is so marked in the adductors of the thighs as to cause the legs to cross one another whenever an attempt is made to make the child walk. Knee-jerks and ankle-clonus are easily elicited, and the first unusually so, unless interfered with by the rigidity of the muscles. Corresponding phenomena may be obtained in the arms, if they are affected, associated often with athetotic movements of the hands. The muscles of the trunk may be so affected by spasm as to interfere with the child sitting in the erect posture, and it is often by such difficulty, or the difficulty the mother experiences in dressing the child, that the former first becomes aware of something being amiss; sometimes it is later, when the child should be beginning to walk.

Such a condition as is here briefly sketched may be associated with some degree of mental impairment, a defect which is sometimes extreme.

Of the three cases shown by Dr. Ness, the first was a boy, aged $2\frac{1}{2}$ years, with all the characteristic features of a diplegia, associated with some athetosis in the hands; the other two cases were two sisters, aged respectively $9\frac{1}{2}$ and $10\frac{1}{2}$ years, who presented the characters of spastic paraplegia. Mentally the two latter were a little "backward." Mental impairment was not evidently a feature of the first.

Dr. Ness then discussed briefly the cause of spastic paralysis of cerebral origin, referring first to Little's views, subsequently confirmed by *post-mortem* examinations. Little showed the connection between protracted and difficult labours, which

ended in "asphyxia neonatorum" or where the child was only resuscitated with great difficulty, and the after-development of spastic paralysis, the asphyxia in the child being caused by meningeal hæmorrhage. Little saw the same connection between premature births and spastic paralysis of children, but did not, and could not, give the explanation.

Pierre Marie suggests in these cases a possible cause, namely, that if birth is very premature it will take place at a period when the crossed pyramidal tract is not fully developed. It is liable then to be arrested in its development, or to be injured, but Dr. Ness pointed out that often cases are obtained where neither one explanation nor the other can be given. These cases must depend upon some ante-natal lesion, possibly inflammatory, which would determine an interference with the development of the crossed pyramidal tract.

Thus it is that most cases of this kind are congenital (ante-natal or natal); only a few occur after birth (post-natal). Such latter cases are more commonly of the hemiplegic type.

Of the three cases shown, the first, the boy, aged $2\frac{1}{2}$ years, was the result of a birth premature by two months. There was no asphyxia neonatorum.

In the other two cases (two sisters) the labour was natural, and at full time. Many months elapsed before the mother realised anything was wrong with these children. Yet, it is probable these cases are congenital, from the fact that we have two in the same family, that we have other nervous ailments occurring in the other children, that a maternal aunt of the children is insane, and that the father is much addicted to intemperance.

Dr. Ness has presented to the Society these cases because they illustrate the fact that spastic paralysis of cerebral origin may be occasioned by other lesions than those occurring at the time of birth. Dr. Ness has shown cases before with the history of "asphyxia neonatorum," and such are numerous, but so also are the cases with the histories such as Dr. Ness had given with these three.

Dr. M'Gregor-Robertson had met with a case in which the spastic condition had gone on from bad to worse. His patient, a girl, is now aged 18, and can neither sit nor stand. She is persistently deformed. He would suggest section of some of the contracted muscles, and would ask Dr. Ness if such treatment had ever been tried.

Dr. Ness, in answer to Dr. M'Gregor-Robertson's question, stated that he knows only of tenotomy for deformities, when

such have occurred. From the results he knows of he does not approve of craniectomy.

III.—DEMONSTRATION OF INSTRUMENTS.

By DR. J. M'GREGOR-ROBERTSON.

Dr. M'Gregor-Robertson gave a demonstration of various instruments for determining blood-pressure, and of apparatus used in fixing blood-films.

IV.—SPECIMEN OF SARCOMA IN ASSOCIATION WITH THE LEFT POSTERIOR TIBIAL NERVE.

By DR. A. R. FERGUSON.

Dr. Ferguson (with the permission of Sir Hector C. Cameron) showed, and briefly described, a specimen of sarcoma in association with the left posterior tibial nerve.

The patient, a young woman, *æt.* 23, had noticed the swelling due to the tumour for a period of eight years. During the first half of this period its growth had been very slow, but latterly it had increased more quickly in size. During the entire period it had been the seat of considerable tenderness, especially on pressure, but also apart from this. The foot had never been swollen. The patient stated that walking had never been interfered with, except on account of the presence and tenderness of the tumour. No difference in the temperature-sense on the two sides was detected by the patient, though she states that in walking the sensation conveyed by the ground was not so accurately felt on that side as by the healthy foot.

The tumour (removed by amputation) was found, after dissection, to present the form of an elongated and generally oval swelling in the trunk of the nerve, having a length of $9\frac{1}{2}$ inches. This swelling is composed of three cysts, filled with brownish fluid (altered blood) and cell *débris*. These cysts appear to be separate from one another. The trunk of the nerve above the tumour gradually expands till the upper confine of the growth is reached, when the fibres become spread out, and to a certain extent dissociated from one another as they course over the surface. A small cystic mass, about the size of a marble, projecting from the trunk of the nerve above the main tumour, was found to consist throughout of a yellowish, homogeneous, almost fluid tissue, having all the characters of a myxomatous mass.

Microscopical examination of a portion of the wall of the growth showed it to be composed of a cellular tissue, in which very varied types of cells were present, with an intercellular matrix rich in mucin.

MEETING VIII.—13TH MAY, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—FRESH SPECIMENS.

A. BY DR. JAMES LAURIE (GREENOCK).

Epithelioma of tongue.—The specimen was from a male, aged 61, in whom the tumour had been first noticed four months ago. Growth had been rapid, and was situated on left side. The tongue had been extirpated, leaving, however, a small portion of the root on opposite side from tumour. This was done to enable patient to swallow. Both linguæ were ligatured as a preliminary, and beyond some venous hæmorrhage (about half an ounce) on side on which growth was situated there was no blood lost. There was no enlargement of lymphatic glands. He could swallow a mouthful of water after effect of anæsthetic had passed off.

B. BY PROFESSOR MUIR.

Sarcoma of liver, brain, and lungs.—The main tumour was situated over the left side of the brain, at middle part of ascending parietal convolution. It was $1\frac{1}{2}$ inch in diameter, and while it implicated calvarium and bulged underneath the scalp it did *not* infiltrate the brain matter. On right side a small tumour was present near the middle line. The lungs were infiltrated with nodules, and the liver was enlarged, weighing between 5 and 6 lb. The affection of the liver resembled carcinoma, but the uniform appearance and soft consistence of the tumour-tissue led one to consider it sarcoma. Microscopically the tumours were composed of small spindles, with very scanty stroma. The growth had been rapid, and, in the liver the capillaries were found blocked with cells. The primary tumour was that in the dura mater.

The case, which was under the care of Dr. Finlayson, presented clinically features partly cerebral and partly hepatic; gastric symptoms were prominent. Paresis was noted both in upper and lower extremity, and attacks of Jacksonian epilepsy occurred from time to time.

The brain-tumour *might* have been removed, but the bone was extensively involved, and this fact put operation out of the question. Aphasia was due to indirect pressure.

II.—TWO CASES OF INTESTINAL SHORT-CIRCUITING FOR STRICTURES OF THE BOWEL.

By MR. A. E. MAYLARD.

CASE I.—Donald S., æt. 22 years, was admitted into the Victoria Infirmary on 9th November, 1900. Up to two months ago he had enjoyed good health, but about this period he became conscious of peculiar rumbling sensations within his abdomen. A fortnight later he felt sick and unwell, and vomited; and in the course of a few days he was troubled with pains of an intermittent character, varying in intensity, but worse after food. These symptoms lasted for two or three days, and then went away. Similar attacks of vomiting and pain recurred every week or so. His bowels, regular before the onset of his illness, have since troubled him, motions occurring every three or four days, and requiring an aperient. No blood was at any time observed. He had been compelled to live on milk and slops, which did not seem to agree with him. He stated that he had lost flesh and appetite since his illness began.

On admission he seemed to be suffering from symptoms of intestinal obstruction. Intestinal peristalsis was visible, associated with sounds of rumbling and gurgling. Nothing could be felt by palpation. He looked pale and emaciated; had a dry and coated tongue; his breath was offensive; pulse was normal, and temperature slightly raised. The symptoms were temporarily relieved by injections *per rectum*.

On 14th November the abdomen was opened. It was then found that there were several large glands in the mesentery, one of which was about the size of a husked walnut. The transverse colon was greatly distended; and on tracing it downwards it led to a puckered stricture of the gut in the region of the splenic flexure. There were many glandular masses and adhesions, of variable size and extent, in and around the strictured part of the intestine. As removal

appeared likely to prove tedious and difficult, it was deemed better to unite the two portions of the colon immediately in front and behind the constriction. The fistula bi-mucosa thus established measured about an inch and a half.

The patient made an interrupted recovery, with complete relief of all symptoms.

He is at present—that is, seven months after the operation—in perfect health, and actively engaged in his employment.

CASE II.—Jessie A., æt. 18, was admitted into the Victoria Infirmary on 28th December, 1900. Her illness commenced about four years ago, when, on taking food, she first began to feel pains, which usually increased until relieved by vomiting. This cycle of events had occurred at variable intervals since. Her bowels do not seem to have troubled her until about a year ago, when she had diarrhœa. Since, however, this symptom commenced, it had recurred from time to time. She noticed that when the pain in the abdomen was bad, it was usually accompanied by a good deal of gurgling. During the last year she had been obliged to restrict herself to very simple diet. About a fortnight ago she became conscious of what she described as “moving lumps” in the abdomen. These were accompanied by a dull, heavy pain, and slight gurgling. After vomiting these symptoms disappeared.

On admission she was seen to be very thin and small for her age, weighing only about 4 st. She had a very marked hectic flush on her face; but no other symptoms suggestive of lung disease. The only thing revealed on examination of the abdomen was the presence of gurgling on palpation and some distension.

On 15th January the abdomen was opened, when eleven separate areas in the small gut were seen to be injected and markedly constricted. These conditions commenced about 3 feet down the jejunum, and extended to the end of the ileum. The dilated part of the jejunum immediately above the first stricture and about 3 feet from the duodenum was applied to the transverse colon, and a fistula bi-mucosa about 2 inches in length established.

The patient made an uninterrupted recovery, with complete relief from all obstructive symptoms.

For about six weeks after the operation she appeared to maintain her body weight, but since then it has gradually declined. It has further been noted that the stools are always lax and extremely offensive. At present she is confined to bed with no complaint but that of increasing weakness; and

although taking quantities of nourishment she has become greatly emaciated. As indicative of approaching dissolution, there is now œdema of the extremities.

In commenting upon these cases there is little to remark upon Case I. The young man has recovered complete health; and although there were marked evidences of masses of tubercular glands in the abdomen before operation, nothing can be felt now. In Case II there are several points of interest. First, as regards the operation. The strictures were too numerous to admit of excision, and the performance of multiple enteroplasties equally out of the question. Dr. Grant Andrew, who was assisting me at the operation, suggested jejuno-colostomy, and this was quite easily accomplished solely by stitching. I may incidentally remark here that since I had a fatal case of obstruction following upon the use of Murphy's button in performing ileo-colostomy, I preferred in this case to stitch only. Fæces, in my fatal case, plugged the button so that the obstructive symptoms for which the operation was performed remained unrelieved, and the patient died.

Reverting to the case under discussion, another interesting point was the possible effect which would result from diverting the chyme so high up in the small bowel into the large intestine. If the *whole* contents of the intestine above were so diverted, there could be but little hope of life being long sustained with such an amount of the digestive and absorptive tract cut off. I had the hope, however, that with the pressure taken off above, the strictures and such inflammatory thickening as might exist around them would sooner or later give way, and admit of some of the chyme finding its course through the lower channels of the small gut. I am afraid, however, that these hopes have not been realised, and that the gradually increasing emaciation, coupled with the thin and very offensive stools, all serve to indicate that death is gradually taking place from starvation, or better perhaps expressed, from an insufficiency of the normal metabolic processes; for she takes large quantities of nourishment, but fails to assimilate it.

Sir Hector Cameron asked why Mr. Maylard considered the case of the man tubercular. He had not seen cases where intestinal ulceration due to tubercle was limited to a solitary ulcer; and yet, in Mr. Maylard's case, the ulcer seemed to have been a single one.

Professor Muir agreed with *Sir Hector Cameron* as to the rare occurrence of tuberculosis in the large intestine. In his

experience, there was usually also accompanying disease of the small bowel. In such cases the infection is generally very extensive, or even diffuse. He had recently made a *post-mortem* where there were adhesions and stricture at sigmoid flexure, and also stricture higher up. The glands were enlarged, but microscopic examination showed that they were not tubercular. Probably the stricture had followed an ulceration of sigmoid from trauma. He would ask if there was much matting of intestine in the second case. He had always found it to exist. The treatment might be criticised in view of importance of small intestine.

Dr. Laurie was of opinion that ulceration of ileum might exist without symptoms, and instanced a case of his own in which, after a thirty-six hours' illness, the patient had perforation of ileum.

Dr. Rutherford would like to know the condition of the patient twelve months after operation. He thought that the opening would not remain permanent, and referred to a case in which he had attached gall-bladder to ileum, and in which the communication had subsequently closed.

Mr. H. E. Clark thought that *Mr. Maylard* could not have acted otherwise than he did in the first case. He generally found much matting of bowel in cases such as the second. He would ask if rectal feeding had been tried in this case.

Mr. Maylard, in reply, stated that he had considered the man's case tuberculous from the appearance of the mesenteric glands. He was willing to accept the doubts as to solitary ulceration being tuberculous, and ulceration of that nature is certainly most frequent in ileo-cæcal region of the intestine. He was, perhaps, led away by the appearance of the glands. Of course, there might have been simple irritation to begin with, with secondary implantation of tubercle. It was possible that the ulcer was simple and traumatic in origin. The reason why he had not removed the enlarged gland, was that, in a previous case, a mass of tuberculous nature had disappeared after abdominal section. With regard to the girl's case, there were no adhesions, and the bowel was easily traced. He had seen, in a case of renal tuberculosis, the bowel free but strictured; also, some years ago, he had seen *post-mortem* a resulting stricture but no adhesions. He had hoped that after short-circuiting the stricture would relax, as in œsophageal cases after gastrostomy. He felt that the patient had benefited, although the result was not apparently good. It was not possible to remove more than $6\frac{1}{2}$ feet of bowel without starvation resulting.

III.—ANEURYSM OF THE FEMORAL ARTERY.

BY DR. JAMES LAURIE (GREENOCK).

J. C., aged 44, grocer's assistant, complained of a painful swelling in the middle of his right thigh. On examining it, I found it was the size of a Tangerine orange, and pulsating, firm, and elastic; the skin over it was freely movable. I diagnosed an aneurysm of the femoral artery, and advised him to come into hospital, which he did accordingly on 11th January, 1901. His condition on admission was as follows:—

There is a rounded swelling situated slightly above the middle of the right thigh, on the inner side, in the line of the femoral artery. The swelling is fairly well defined; it is of very firm consistency, not very movable, not fluctuant, and the skin over it is in no way involved. On palpating the tumour it is found to have a distinctly expansile impulse. Pressure applied to the femoral artery above the tumour causes the impulse to cease. There is no pulsation to be felt in the posterior tibial at the ankle. Auscultation over the tumour reveals a loud, blowing, systolic murmur.

Personal history.—He had rheumatic fever ten years ago, and syphilis nineteen years ago, but has otherwise enjoyed good health. He has been intemperate in his habits. The present illness began about Christmas week of last year (1900). He first felt slight pain about the middle of the inner side of his thigh, and noticed a slight swelling there, which was hard to the touch and painful, and he states that he could feel it beating. The swelling gradually increased in size, and became more painful, especially after walking; he thought it was connected with varicose veins.

The treatment adopted on admission, viz., rest in bed, dry diet, and iodides in increasing doses, with the limb elevated and swathed in cotton-wool, was continued under the supervision of my colleague, the late Dr. Black, until 12th February, during my absence from hospital.

The condition of the tumour on 25th January, 1901, was noted as follows:—The limb is very much swollen from the knee downwards, and the character of the original swelling is also changed; it is much more diffuse, and has a hard, board-like feel, and the expansile impulse is scarcely perceptible. The skin over the tumour is glossy and discoloured, and it presents a dusky appearance. The patient complains of very severe pain, spasmodic in character, shooting down the leg, and requiring hypodermic injections of morphia for its relief.

Sensation in the limb is almost completely gone from the knee downwards.

On my return to duty, in the second week in February, the diameter of the thigh over the tumour was $21\frac{1}{2}$ inches, as compared with 17 inches at corresponding part of the opposite thigh. After consultation with the staff, operation was decided upon, at the urgent request of the patient. The operation was performed on 16th February as follows:—An incision was first made, commencing above Poupart's ligament, and the common femoral was exposed; around this was passed loosely a provisional silk ligature, clipped by a pair of Kocher's forceps, and given to an assistant to hold, with instructions to raise if hæmorrhage should occur. A second incision was then made over Hunter's canal, at the junction of lower and middle third of the thigh, continued till the sartorius muscle was brought into view, and deepened till the roof of the canal was exposed and opened. The artery and vein were adherent to one another at this point, and I passed a provisional ligature round both. I next connected the two incisions, and, pulling the sartorius to the inner side, saw that the sac consisted principally of the muscles of the thigh, with the true sac lying spread out posteriorly. I now tied a strong catgut ligature at the healthiest part of the artery, about 2 inches above the aneurysm, and another about the same distance below. After separating, I lifted the diseased portion of vessel bodily out with the fingers. There was little or no hæmorrhage, but a slight discharge at the lowest point of detritus and sanious pus. The part removed consisted of a large mass of dark, tarry, compressed clot, but not laminated, the size of a foetal head. The cavity was washed out with saline solution, and it was estimated that it held two pints. The incision was closed with silkworm-gut sutures, above and below, and packed in the centre with sterile gauze. He suffered very severely from shock for the first twenty-four hours after the operation. The gauze was removed on the third day, and the cavity was repacked. From 14th February till 14th March the wound was dressed daily, as above described. This daily dressing was necessary on account of the wound having become gangrenous, and large sloughs of muscle and fascia came away.

At this stage a 3 per cent solution of peroxide of hydrogen in normal saline solution was used to irrigate the cavity, and had an instantaneous effect as a deodorant; the sloughs also seemed to separate much more rapidly after we began to use it.

On separation of the sloughs, the limb was strapped with sterile gauze and the cavity obliterated; union of the edges was rapid and complete.

The ligature over the common femoral was allowed to remain for forty-eight hours, and then removed. The incision measured $17\frac{1}{2}$ inches in extent.

I submit the temperature chart before operation, and until the temperature became normal. His weight was greatly improved, and, as there is still a partial loss of sensation of the leg and slight difficulty in walking, he is being kept in hospital, and is improving under massage and electricity.

REFERENCES.

Dr. D. A. Knox, *Transactions of the Glasgow Pathological and Clinical Society*, vol. v, p. 2—Tied above and below and allowed to granulate.

Mr. Maylard, *Transactions of the Glasgow Pathological and Clinical Society*, vol. iv, p. 157—Extirpation of radial.

Dr. C. K. Briddon, *Annals of Surgery*, vol. xxix, p. 605.

Sir Hector Cameron looked on the case as being idiopathic, and thought that the "old operation" would have been better than excision. The incision here was very long, and the temporary ligature was unnecessary. He had lately had in the Western Infirmary a case in which there was a large, non-pulsating tumour in the lower part of the thigh. The man, in the course of his occupation, was in the habit of working a lever with his knee. The condition was thought to be a highly cellular sarcoma. Exploratory incision allowed a great mass of clot to be squeezed out; it was followed by a jet of arterial blood. The femoral was compressed, and a tourniquet applied. The vessel was ligated above the aneurysm. Below, he could not separate the vein, and as he was afraid to tie it, he took off tourniquet, and found that no further hæmorrhage occurred. He packed the wound with gauze. His incision was 3 inches in length. He considered that that case might fairly be called "traumatic." He congratulated Dr. Laurie on his case, and thought that probably the lameness would ultimately pass off.

Mr. H. E. Clark thought that the incision, $17\frac{1}{2}$ inches, was very long. The treatment had been successful, although the limb would be weak for some time yet. He also mentioned a case of ruptured popliteal aneurysm, in which there occurred extravasation right up to the hip. There was no history, but ecchymotic patches were observed and gave the clue. A large incision was necessary in that case. He was chary of

ligaturing the vein, but the danger in such a case was not so great as in primary injuries to the vessel, because the vein, if adherent, would be to a large extent obliterated.

Dr. Laurie, in reply, said that the incision was very little greater than necessary. Provisional ligatures prevented hæmorrhage at all. He thought that strain *plus* syphilis justified him in calling the case "traumatic."

IV.—DEMONSTRATION OF INSTRUMENTS.

By DR. DAVID NEWMAN.

Dr. Rutherford showed for Dr. Newman—

1. Dr. Newman's ureteral resonator for detecting calculus impacted in the ureter.

2. Harris's urine segregator.

3. Schlagintweit's cystoscope, which provides for the irrigation of the bladder without removing the instrument.

1 and 2 are described and figured in the May number of the *Glasgow Medical Journal* (vol. i, 1901, pp. 327, 329).

V.—PATENCY OF PERICARDIUM: SOLITARY KIDNEY: SEPTUM IN URINARY BLADDER.

By DR. EDWARD J. PRIMROSE.

Dr. Primrose's paper appears as an original article at p. 184.

REVIEWS.

Text-Book of Medicine. Edited by GEORGE ALEXANDER GIBSON, M.D., D.Sc., F.R.C.P.E. Edinburgh and London: Young J. Pentland. 1901.

It was for a considerable time a matter of reproach to this country that there were so few satisfactory treatises on the practice of medicine available for the use either of students or of practitioners. Students divide their patronage between one good London text-book which has gone through several editions, and a treatise which, while also good, is of trans-

atlantic origin. The latter is comprehensive enough to be acceptable to practitioners, but until recently there was no satisfactory equivalent in Britain, for Bristowe and the classic Hilton Fagge have long been out of date. The appearance of Allbutt's *System* marked a distinct revival in this direction, and this is rightly being supplemented by the same publishers by the issue of a *Manual* or smaller treatise in five volumes, of which, however, only two have yet appeared. The present *Text-Book* may be regarded as an attempt on the part of a certain combination of British physicians to take their part in the international competition.

The work appears in two large volumes, which together represent more than seventeen hundred pages. Nearly forty contributors have taken part in its production, and the names of most of these are so well known to the profession as to command the attention of the reader. The question as to the aim of the work is raised by the first article, a most able and interesting one by the late Professor Kanthack and Professor Sims Woodhead. This treats of general pathological processes, such as atrophy and amyloid change, and of various subjects which belong to the modern science of bacteriology, such as immunity, contagion, and serum therapeutics. While the style of this contribution is much too philosophical and concise for the purposes of the student, who will learn his pathology elsewhere, it is, on the other hand, admirably suited for the practitioner who wishes to acquaint himself with the most recent teaching in pathology.

The infectious diseases are described by various writers, among whom Dr. Patrick Manson may be specially mentioned as the author of the articles on diseases prevalent in foreign countries. Syphilis and tuberculosis are discussed by Dr. Hector Mackenzie, the second of these in an article of nearly one hundred pages. We see illustrated here the difficulty arising from our present inability to classify diseases on a strictly scientific principle. Thus we get different descriptions of syphilis of the heart from different writers in the two volumes, the one under syphilis, the other under diseases of the myocardium. Similarly, we have different accounts of lupus vulgaris and other forms of cutaneous tuberculosis in the two volumes, and as these include the subject of treatment, the duplication seems to go to an unnecessary length. In connection with both syphilis and tuberculosis, we have descriptions of the specific pulmonary affections; whereas, under the heading of lung diseases, syphilis is singled out for consideration from among the infective new-formations.

This overlapping is obviously attributable to the multiplicity of authors, and the free hand given to each by the editor. The remaining general diseases follow the infections in Section I.

Section II, on diseases caused by animal parasites, is by Dr. Patrick Manson; and Section III, on diseases caused by chemical substances, by Dr. Thomas Oliver. The next section includes diseases of the mouth and stomach, by Dr. Sidney Martin; diseases of the intestines, by Dr. H. P. Hawkins; diseases of the liver and of the pancreas, by Dr. Hale White; and diseases of the peritoneum, by Dr. Lockhart Gillespie. Here, again, we may remark upon the duplication of work. In this volume, we have two distinct contributions on tubercular peritonitis—the one, by Dr. Hector Mackenzie, under the heading of tuberculosis, and the other, by Dr. Lockhart Gillespie, under the heading of diseases of the peritoneum. Each of these articles occupies between three and four pages, and has one or several paragraphs devoted to each of the following aspects of the subject, viz., etiology, morbid anatomy, symptoms, diagnosis, prognosis, and treatment.

Volume II opens with Section V, in which the diseases of the blood and ductless glands are described by Professor Stockman. In Section VI, diseases of the peri- and endocardium are considered by Dr. Gibson, and those of the myocardium by Dr. Mitchell Bruce, while neuroses of the heart are allotted to Sir Lauder Brunton. Dr. Gibson, dissatisfied with the usual classification of endocarditis into simple acute, malignant acute, and chronic varieties, proposes instead the grouping into acute, subacute, and chronic. Acute thus seems to correspond to infective or malignant, and, apparently, what is usually called simple acute is included under subacute. The proposed new classification does not appear to us to offer any advantages, but rather the reverse.

It is an interesting question in what proportion of cases of rheumatism endocarditis supervenes. Dr. Gibson declines to quote figures on this point, and his caution is perfectly intelligible, but in the same article he adduces statistics which we believe—so far as concerns the purpose for which they are used—to be utterly unreliable. We are told that endocarditis “is by no means so common as pericarditis. In a total of 2,368 cases of heart disease admitted between 1891 and 1896 [curiously enough, the same total is given on page 80 for the five years 1893-1898], there were only 50 diagnosed as endocarditis, 26 males and 24 females, of whom 14 and 18 respectively died.” We imagine that the physicians to the

Edinburgh Royal Infirmary will not care to have it published as a fact emanating from one of themselves that the mortality of cases of endocarditis of all kinds under their care is at the rate of 64 per cent; nor, we fancy, would they commit themselves to the position that of twenty-three hundred cases of heart disease, only fifty could be regarded as endocarditis. Dr. Gibson, of course, recognises that this will not do, and he adds—"There can be no doubt that this somewhat understates the frequency of the disease, which must have been a frequent attendant upon many other diseases under treatment."

The subject of diseases of the respiratory system is undertaken by Drs. A. G. Auld, R. W. Philip, and V. D. Harris. Diseases of the kidneys are discussed by Dr. Rose Bradford, who separates the granular or small red kidney from Bright's disease, on grounds which are by no means convincing. Thus, in his preliminary remarks on classification, he says (p. 317)—"If the term granular kidney is to be restricted to that form of renal lesion which is associated with widespread arterial degeneration, and where the kidney lesion is only part of extensive arterial changes, it should not be included under Bright's disease, inasmuch as it is an independent affection, which only distantly resembles it." And in the description of "granular kidney" we read (p. 333), that "the true granular kidney may arise either as an independent primary affection, or else as part of a widespread arterial degeneration," and also that granular kidney "consists in a degeneration of the epithelial structures of the kidney, accompanied by a great overgrowth of the interstitial fibrous tissue, together with arterial degeneration, specially marked in the renal vessels, but affecting also those of the body at large."

In Dr. Allan Jamieson we have a safe guide to cutaneous disorders. Sir W. R. Gowers gives us an admirable introduction to nervous diseases, a subject which is elaborated by various writers. Dr. Alex. Bruce writes on diseases of the nerves, and accompanies his contribution with copious and valuable illustrations. The diseases of the spinal cord are described jointly by Sir W. R. Gowers and Dr. James Taylor. The descriptions are for the most part abbreviated from those in Sir William's monumental work, but we miss here the excellent illustrations which so freely adorn that author's *Manual*. Diseases of the brain and functional nervous affections (including exophthalmic goitre) are allotted to a number of contributors, among whom may be mentioned Drs. Mott, Risien Russell, and Aldren Turner.

In a work of such dimensions as the present, faults can

generally be found. We are unable to find any description of tetany. Two references are given in the index. In the one passage, it is a matter of differential diagnosis; in the other, a line and a half are given to tetany under the head of rickets. Other incidental allusions occur here and there, and the occasional association with gastric dilatation is noted, but tetany itself appears to escape detailed notice.

Something ought to have been said on the subject of headache, and an extraordinary omission is the absence of any account of migraine. The elaborate index was drawn up by a medical man who, inserting the reference to the rare migraine ophthalmoplégique, might have been expected to see that the common sick headache was not overlooked.

Though the preface is dated April, 1901, the articles are not all so recent as this. For instance, it is stated that, with the exception of the small Russian epidemic of 1878-79, bubonic plague has not been seen in Europe since 1841, and this is not the only example of the kind that might be mentioned.

Typographical errors are not numerous in proportion to the size of the work. In the last paragraph on page 33 (Vol. I), the unfortunate introduction of an "and" spoils an important sentence. The proof-reader is obviously at fault on page 625 (Vol. I), where "followed" occurs instead of its contrary, "preceded"; and Dr. Weir Mitchell would probably be better pleased with a spelling of his name different from that which appears on page 480 (Vol. II).

As we have already remarked, it is easy to pick faults, but in this case it is also easy to recognise great merits both in the conception and in the execution of this text-book, and we congratulate all concerned in the production of a work that certainly does credit to modern British medical teaching.

Introduction to the Study of Medicine. By G. H. ROGER.
Authorised Translation by M. S. GABRIEL, M.D. With
additions by the Author. London: Henry Kimpton. 1901.

THIS book is a reproduction of a course of lectures delivered by the author in 1897-98 at the University of Paris. The purpose of it, he informs us, was to lessen as much as possible the difficulties met with in the study of the medical sciences. We at once remember the familiar saying that there is no royal road to learning. Several of the earlier chapters are devoted to a discussion of the various agencies (mechanical,

physical, chemical, and animate) by which disease is induced. The following chapters deal with the infections, nervous reactions, disturbances of nutrition, the pathology of the foetus, inflammation and septicæmia. In later chapters there are considerations on tumours, the examination of the sick, diagnosis and prognosis, and therapeutics.

The teaching strikes us as being of a very general kind, and better adapted for easy reading in a leisure hour than for use as a text-book by the overwrought student. It will be most interesting, perhaps, to the reader who proposes to study medicine, but has not yet settled down to a regular course. To Professor Roger's credit be it said that he endeavours to show the possibility of making "a diagnosis and prognosis by simple means within the reach of all." We hope this expression will not be misunderstood.

We are indebted to Dr. Gabriel for giving us easy access to Professor Roger's work; none the less since this mode of teaching differs so much from that in vogue in this country at the present day. The only thing we remember that resembles it is Lionel Beale's *Slight Ailments*. Nothing but good can result from the internationalising of good literature.

A Text-Book of the Practice of Medicine. By DR. HERMANN EICHHORST. Authorised Translation from the German. Edited by AUGUSTUS A. ESHNER, M.D. With 84 Illustrations. London: W. B. Saunders & Co. 1901.

PROFESSOR EICHHORST's name is so familiar to the English-speaking practitioner that this authorised translation of the *Practice of Medicine* ought to be heartily welcomed. Though this issue is, for convenience, presented in two volumes, the work is described by its author as a short text-book undertaken, not on his own initiative, but at the persistent request of pupils. Those who wish to study his teaching with greater elaboration are referred to the *Handbook of Special Pathology and Therapeutics*.

The present work differs in some ways from our familiar British text-books of medicine, as, for instance, in including a consideration of the venereal and other disorders of the sexual organs. The classification of diseases is not a common one, and in the case of the infections is perhaps needlessly elaborate, though doubtless convenient. We note that muscular rheumatism and chronic articular rheumatism, as well as the

acute disease, are regarded as infectious diseases. On the other hand, pernicious anæmia is put among diseases of the blood, whereas Dr. William Hunter's researches have revealed good grounds for regarding it in the light of an infection.

These volumes furnish us with interesting reading from the pen of an acknowledged master, and the translation strikes us as being thoroughly worthy of the matter.

Pernicious Anæmia: Its Pathology, Septic Origin, Symptoms, Diagnosis, and Treatment. Based upon original investigations. By WILLIAM HUNTER, M.D. Edin., F.R.C.P. Lond., F.R.S.E. With Plates, Charts, and Illustrations. London: Charles Griffin & Co., Limited. 1901.

THIS work is not only an excellent account of pernicious anæmia as we now know it, but also an elaborate exposition—to a large extent in chronological order—of those researches of Dr. Hunter, which have shown us the disease in an entirely new aspect, and which, if their results stand the further tests of time and experience, will complete a revolution in the modern doctrine of the disease, and be second in importance only to the discovery of its existence.

After an interesting historical account of the various opinions that have been held as to the nature of pernicious anæmia, Dr. Hunter proceeds to show that it is not simply an extreme degree of ordinary anæmia, but an anæmia of a special kind which can be quite clearly separated from all others. Where cancer of the stomach, intestinal worms, &c., have been found in association with pernicious anæmia, the connection has been accidental, or at least not essential. Among the anatomical changes in the blood, the one to which most importance is attached is the relative richness of the red corpuscles in hæmoglobin; while the most constant change found after death is the great excess of iron-containing pigment in the liver, a condition which is of itself sufficient to distinguish true pernicious anæmia from those types of anæmia which in respect of pallor most closely resemble it during life, viz., those of malignant disease and hæmorrhage. While the iron in the liver is increased, that in the kidney is as constantly and proportionately even more increased, whereas that in the spleen undergoes no proportional increase.

Dr. Hunter proceeds to point out that the evidence is in favour of the view that there is not so much defective forma-

tion as excessive destruction of blood corpuscles. This leads to Part III of the book, which is entitled *Experimental*, and deals with (1) the physiology of the blood, (2) hæmolysis in health, and (3) hæmolysis in pernicious anæmia. It is accepted as probable that the life of the red blood corpuscle within the circulation does not extend beyond three or four weeks. The researches on hæmolysis are most instructive and interesting. A distinction is drawn between (*a*) chronic hæmocytolysis, in which the red corpuscle is taken up bodily by cells, and carried to the spleen, bone-marrow, and capillaries (never cells) of the liver; and (*b*) the more important acute hæmocytolysis, in which the hæmogoblin is set free from the corpuscle. The latter process takes place in the spleen, gastro-intestinal capillaries, and hepatic capillaries (named in the order of importance), and this brings about a local hæmoglobinæmia in the portal area. The hæmoglobin liberated in the hepatic capillaries may then be taken up by the hepatic cells. The hæmolysis of pernicious anæmia also takes place in the portal area, but it displays certain features which Dr. Hunter regards as special, and capable of being reproduced experimentally only by hæmolytic drugs, and notably by toluylendiamin.

In the particular disease under consideration, the hæmolytic agent is regarded as being the product of organisms which, under certain conditions, invade the mucous membrane of the digestive tract. Pernicious anæmia is accordingly looked upon as a chronic infective disease of the alimentary tract, and especially of the stomach, taking origin most commonly in oral sepsis. Fortunately, as Dr. Hunter believes, an antecedent septic gastritis is necessary to a successful infection, so that if gastritis is recognised and cured in time, pernicious anæmia may be prevented. For equally obvious reasons, oral sepsis should never be neglected. The symptoms of the disease are arranged in four groups:—(1) Effects of the anæmia (pallor, breathlessness, &c.); (2) effects of the hæmolysis (lemon colour, urobilinuria, &c.); (3) symptoms referable to the lesions of stomach, intestine, or mouth; and (4) symptoms denoting the infective nature and virulence of the agents that cause the anæmia (headache, languor, and various other nervous symptoms, including evidences of neuritis).

In Chapter XXXI, Dr. Hunter gives us descriptions of twelve cases, and in the following chapter he proceeds with the subject of treatment. This naturally commences with the hygiene of the teeth and mouth, and with the local treatment of the stomach, and, if need be, of the intestine. Dr. Hunter has a high opinion of arsenic as a remedy, and believes that

it has increased the expectation of life considerably in this disease. Serum-treatment has not yet had a thorough trial, but its results are anticipated with hope. The later portions of the work are devoted to the physiology of blood destruction as studied in various aspects, and to the relation of hæmolysis to jaundice. The illustrations, several of which are coloured, are numerous and good.

There is still something mysterious about pernicious anæmia. It is not plain why the anæmia that follows hæmorrhage should sometimes be progressive and fatal, and be associated moreover with febrile attacks. Nevertheless, Dr. Hunter has done magnificent work towards the elucidation of a hitherto almost hopeless disease, and we are deeply indebted to him for this excellent monograph.

Surgical Experiences in South Africa, 1899-1900; being mainly a Clinical Study of the Nature and Effects of Injuries produced by Bullets of Small Calibre. By GEORGE HENRY MAKINS, C.B., F.R.C.S. London: Smith, Elder & Co. 1901

It will be remembered that at an early stage in the present war the Government sent out a number of hospital surgeons as consultants. The principle on which these gentlemen were selected is still a mystery, but Mr. Makins, in producing the volume now before us, fully justifies the choice of one of them. As he has also been selected as one of the committee appointed to consider and report on the reforms necessary in the medical department of the army, he will have further opportunities of putting to good use the knowledge and experience gained in the field and in the hospitals in South Africa.

Mr. Makins was fortunate in having experience in various parts of the wide area over which the operations of war took place, and in being in a position to see the wounds produced by the various projectiles both immediately after their production and also at various later dates. Indeed, he has in many instances been able to follow up the patients after their return home, and has spared no pains in getting reliable information as to the ultimate results of the injuries. As his sub-title indicates, his book is "mainly a clinical study of the nature and effects of injuries produced by bullets of small calibre," and we think he has been wise in thus far limiting the scope of his treatise.

In the first place, it may be pointed out that Mr. Makins corrects some errors which have met with pretty general acceptance. It was—if we mistake not—one of our generals who told his men that an engagement through which they had passed was the most bloody in the annals of British warfare, and there is a general impression that our losses were exceptionally great, both in the advance of Lord Methuen's force intended to relieve Kimberley, and in the operations in Natal under Sir Redvers Buller. As regards the former of these operations, our author is able to show, from carefully compiled statistics, that in the four engagements of Belmont, Graspan, Modder River, and Magersfontein, the percentage of killed was only about two-fifths of that at Waterloo, two-elevenths of the percentage of killed in the Russo-Turkish War, was less than the general average of the Crimean War, and only a shade higher than the mortality of the German troops in the Franco-German War. Further, it is shown that if we slump the killed, wounded, and missing, the total casualties thus arrived at bear a smaller proportion to the number of troops employed in the case of the Kimberley Relief Force, than in any one of the other campaigns mentioned.

It has been assumed that as firearms have in later years so greatly increased in range, quickness of fire, and power of penetration, warfare with modern weapons should be more deadly, and it has even been anticipated that nations will cease to go to war because of the greater destructiveness and mortality of the combat. The recent war gives no support to such expectations, and Mr. Makins sums up the position very well when he says—"On the face of the numbers, therefore, there is little ground for assuming that the change in the nature of the weapons has materially influenced the deadliness of the warfare at all. This is capable of explanation on the ground that in the Crimea the battles were fought at much closer quarters, and hence the weapons of the time were as effective, or more so, than the present ones. That this increased distance between the combatants will always counterbalance the increased deadliness of the weapons in the future is more than probable, since the range of effectiveness has been increased both in rifle and artillery fire" (p. 16). Not only has the distance between the combatants been great in the Boer War, but there has rarely been massing of men in column or square, such as was common in former wars, and this fact must materially influence the number of casualties. Our author wisely warns us against assuming that the present

war is in any sense a typical example of modern warfare, although it has been fought with modern weapons. He says, "When the theory of the war held by the Boer—*i. e.*, going out to shoot an enemy without incurring risks of being yourself shot—is borne in mind, the special circumstances attending the present campaign are sufficiently obvious to need little further remark. A future campaign, in which the combatants are as equally well armed, but each side stands to the last, will probably give very different results" (p. 17).

We heard much at one time of the baseness of the Boer in using "poisoned bullets," and anyone going over a collection of surrendered or captured ammunition could readily pick out numbers of Mauser cartridges coated with a thin layer of green material, apparently verdigris. This was clearly not an accidental fouling, for even a cursory examination showed them to have been dipped, and the whole five on a clip would be coated with the material to the same level. Our own opinion coincides entirely with that of Mr. Makins, that the cartridges had been dipped in paraffin wax, bees-wax, or some similar material, probably for the purpose of enabling them to pass with less friction through the rifled barrel of the gun, and that the formation of verdigris was due to the copper alloy in the outer coating of the cartridge case and the mantle of the bullet.

In regard to the use of "explosive bullets," he says—"‘Explosive’ bullets of small calibre were said to have been employed; with regard to these I can only say that I never met with any example of a hollow bullet containing explosive material." In this respect, also, his experience agrees with our own, but we think it unfortunate that holding such views he should perpetuate the name "explosive" by devoting a portion of Chapter V to the description of "explosive" wounds. There is no doubt that Mauser bullets were extensively tampered with by the Boers, and that they did this with the idea of increasing their wounding power. Not only were "soft-nosed" bullets fairly common, but many were met with where the mantle had been slit up by two or three vertical incisions, so as to expose the core, while in others the "nose" had been ground away or cut with a cross slit, or a groove cut round below the exposed end. The purpose aimed at in all cases seemed to be to allow of the greatest deformation of the bullet, both in passage through the rifle and when it penetrated the human body, thus producing a more irregular and serious wound. It is not, however, proved that the

Boers were entirely successful in effecting their purpose, for in nearly every case where serious wounds resulted from Mauser bullets, the bullet was broken up or distorted by contact with dense bone, or owed the irregularity of its wound to the obliquity of its entry in relation to the skin surface. We trust, however, that Colonel Stephenson, or other expert in gun-shot wounds, will, after the war is ended, set this matter at rest by experimenting with bullets treated in the several ways we have mentioned.

Mr. Makins' book is so full of interesting and suggestive material that we are tempted to trespass beyond the normal limits of a review, and to make reference to the reports of cases, more than 200 in number, which add so greatly to the value of the volume. We can only express our surprise and admiration that he should have been able, under the trying conditions of the work in South Africa, to gather notes so valuable, and for the most part so detailed.

He bears ungrudging testimony to the work accomplished by the permanent medical staff of the army, and we are sure that every civilian-surgeon in South Africa, who was well informed, would endorse the following fitly chosen words of eulogy—"The strain thrown upon this department of the service, originally organised for the needs of an army less than half the magnitude of that eventually taking the field, was incalculably great, and the medical profession may well be proud of the efforts made by its military representatives to do the best possible work under the circumstances."

The book is excellently got up and well illustrated. We can especially commend the twenty-five full-page plates of skiagraphs, showing (as they do) bony injuries of great variety and interest.

Cliniques Médicales Iconographiques, par MM. P. HAUSHALTER, G. ÉTIENNE, L. SPILLMANN, et CH. THIRY. Fascicule I—Planches 1 à 7. Paris: C. Naud. 1901.

If the first fasciculus is a representative one, this French atlas of clinical medicine will be a fine one. The complete work will consist of 8 fasciculi, comprising 62 plates with 398 figures, which are based upon 284 cases. The fasciculi are to appear at the rate of one a month from May to December, 1901; and the subscription price for the work is only 50 francs.

The first fasciculus is devoted to the muscular atrophies,

both spinal and idiopathic; the latter of these groups of types has the greater number of figures allotted to it.

The general arrangement of the present fasciculus may be thus indicated. After a general dissertation on spinal muscular atrophy (*atrophie musculaire progressive myélopathique*), which is illustrated by the figures in the first two plates, Plate I comes with its four figures, which are described briefly on the page facing it. We next have a more detailed description of the figures, and brief clinical histories of the cases from which they are taken. Plate II contains five figures, and is similarly explained briefly and also in detail. After this we have a dissertation on the myopathic atrophies, and on progressive spinal amyotrophy of early childhood (*Hoffmann's type*). The five remaining plates have reference to these types of muscular atrophy, and, like those already mentioned, have appropriate descriptions in the text.

This is a valuable and meritorious work, and we look forward with pleasure to the appearance of the succeeding fasciculi.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By G. H. EDINGTON, M.D.

Injection of Morphia, after Chloroform Narcosis, followed by Dangerous Symptoms; Restoration of Respiratory Movements by Direct Irritation of the Tracheal Mucous Membrane.—The author records the case of a robust young man, aged 18, on whom he operated for the removal of a naso-pharyngeal polypus. The night before the operation, 25 c.c. of antistreptococcic serum (*Denys*) were injected, and at 10 A.M. the following day chloroform was administered, and the operation performed. The right external carotid artery was first ligatured; temporary resection of right superior maxilla (*Kocher's method*) followed, with slight bleeding from the nasal, facial, and coronary arteries of the opposite side. The maxilla having been turned outwards, the polypus was easily detached at its pedicle, with moderate hæmorrhage controlled by pressure; the bone was then returned, and fixed in place by catgut sutures.

The anæsthesia had been unavoidably interrupted from time to time during the operative procedures, and it had been stopped before the conclusion of the operation; but there had been no bad symptoms. When put to bed the patient was very restless, and a subcutaneous injection of 1 cgm. of morphia was given (at 11:30 A.M.) Almost immediately he became calm, and fell asleep. Shortly after noon he was observed by the ward-sister to be livid,

and with very slow respiration ; but as he was not bleeding, had no obstruction in the air-passages, and as the pulse continued normal, she did not attach great importance to the occurrence.

At quarter to one, respiration stopped completely. Awaiting the arrival of the surgeon, the sister performed artificial respiration, and obtained some spontaneous but very feeble respiratory movements. At quarter past one Dr. Depla saw the case. He observed that, in addition to the cessation of respiratory movements, the pupils were strongly contracted, corneal reflex present, and pulse, while feeble and slow, quite perceptible. He continued artificial respiration, administered six hypodermic injections of camphorated oil (25 cgm. of camphor in each), two of benzoate of caffeine (25 cgm. each), and two of ether. He also injected normal saline solution in the groins, and flicked the skin of the thorax and abdomen with linen moistened in hot alcohol. After ten or eleven trials, the patient made an attempt at inspiration, but this was all. Pulse varied in strength, but rate remained the same—40 per minute.

The author saw the patient at 3:30, and confirmed Depla's observations. After another quarter of an hour's artificial respiration the patient, moribund, was carried into the theatre, which was suitably heated. There rhythmical traction of the tongue was carried out, affusions of very hot water on thorax, abdomen, and arms, and application of heat-rays of thermo-cautery to the thorax and epigastrium. All this time artificial respiration was continued, and hypodermic injections of camphorated oil, &c., were administered, but without appreciable improvement in the patient's condition. In spite of care, it was evident that after four hours of paralysis a little blood must have entered the air-passages. At 5 o'clock tracheotomy was performed and artificial respiration renewed, but without avail. Gauze tampons mounted on hæmostatic forceps, about 5 inches in length, were introduced through tracheal wound down to the bifurcation. This was repeated five or six times, and each time was accompanied by a violent expiratory effort. After persevering for a dozen or so times, incoördinate movements of arms and legs accompanied the respiratory efforts. From this time on—i.e., about ten minutes after tracheotomy—the patient made spontaneous movements of respiration ; but it was necessary to keep these going by artificial respiration, and by stimuli applied to the skin—e.g., pinching. He required careful watching till the following morning, as he had a great tendency to sleep, and whenever his eyes closed respiration ceased.

The tracheotomy tube was removed next day, and he made an uninterrupted recovery. To the pre-operative antiseptic precautions, and the injection of antistreptococcic serum, the author attributes the apyretic course of the case.

In the author's opinion, the patient was suffering from morphine poisoning, the toxic power of the morphine being exaggerated, while modified by the chloroform narcosis, so that minimal doses of the alkaloid may provoke alarming and even fatal troubles. He mentions two cases of his own in which death ensued.

Without dogmatizing, the author evidently looks on the direct irritation of the tracheal mucous membrane as a last resource in a case of imminent death from chloroform.—(Lauwers, *Journal de Chirurgie*, Bruxelles, Mars-Avril, 1901.)

Treatment of Complete and Irreducible Prolapsus Recti.

—The patient, a man, aged 44, had suffered for ten years from rectal prolapse, which, at first easily reducible, recurred under even slight exertion. Some months since, severe and continued pains commenced ; the prolapsed piece of bowel showed numerous spots of ulceration, and there was established a mucopurulent secretion, accompanied by hæmorrhages and uncontrollable diarrhœa. Work became impossible, and he soon became markedly emaciated.

Examination showed a reddish-black tumour, the size of an infant's head ; the surface was ulcerated, ridged and fissured, and covered with stringy

bloody mucus; the base was continuous with the skin around the anus; the orifice was situated on the summit of the mass, and was directed slightly backwards. The sphincter was completely relaxed, and the perineum non-resistant. No loops of small intestine could be felt in the sac between the two segments of the rectum.

Operation was divided into three stages:—

1. *Amputation of prolapsed portion.*—Chloroform anæsthesia; aseptic precautions; lithotomy position. Two lateral incisions divided the mass into anterior and posterior parts, which were then amputated; bleeding points ligatured, and wounds stitched with interrupted catgut sutures.

2. *Intrapelvic shortening of bowel.*—Latero-dorsal position; median incision from posterior surface of coccyx to anus, uncovering the posterior surface of the rectum, the length of which was diminished by forming a transverse fold by a series of sutures placed longitudinally; these were of catgut, and went no farther than the muscular coat.

3. *Suture of ano-coccygeal muscles.*—The lips of the skin-incision were retracted, and on each side the fleshy bundles of the hindmost part of the levator ani were exposed. They were sutured to those of the opposite side, the loops of suture including the muscularis of the bowel. Below, the sphincter ani was similarly treated, and thus was obtained a median, vertical, muscular raphe, occupying the ano-coccygeal space.

Healed in fifteen days, the patient resumed work in the pit one month later without the least pain or hindrance. His general condition rapidly improved.

The author draws special attention to the building up of the perineum by the third stage of the operation, which he holds allows the levator muscle to act as a suspender and a sphincter.—(Hannecart, *Annales de la Soc. Belye de Chir.*, Mars-Avril, 1901, p. 251.)

Cirsoid Aneurysms and Arterio-Venous Aneurysms of the Hairy Scalp.—Broca reports the case of a girl, aged 8½ years, who presented a cirsoid aneurysm of the hairy scalp. He refers to the obscure impression as to the exact nature of such a tumour which one gets from the literature of the subject. The difficulty resulted from not obtaining for examination specimens at a sufficiently early period of their development; and while it was more and more admitted that there was probably an abnormal arterio-venous communication, it was not proved, and cirsoid aneurysm continued to be defined as "a tumour constituted by a dilatation, with elongation of trunks, branches, and capillaries of one or several arterial territories." One dared not add that the dilatation was "consecutive to an abnormal arterio-venous communication." This is now understood, thanks to F. Terrier's paper, published in 1890, on two cases in which the anatomical examination was made by Malassez. At the same time there has been established the strict analogy between cases of true arterio-venous aneurysm and those where the origin of the trouble is an angioma which has undergone special evolution. Broca's case belongs to the first category. The tumour was situated in the right parietal region, was somewhat flattened, with ill-defined margins, and was covered with red and slightly violet-coloured skin. Pulsation was visible and palpable, and on auscultation an intense systolic soufflé was heard. Around the tumour were numerous dilated, serpentine, pulsating vessels, of which the superficial temporal artery was the most prominent. This vessel evidently was the main supply; compression of it was followed by almost complete cessation of pulsation. The pulsation returned soon, however, but was quite abolished by simultaneous compression of the occipital artery. On closer examination, instead of diffuse pulsation, a fremitus or "thrill" was found at the antero-inferior part of the tumour; and on auscultation here there was heard a bruit, not systolic but continuous, and of varying intensity (*renforcement*). This soufflé was not propagated in the neighbouring large vessels, and, in particular, the jugular was perfectly quiet. That here was the principal lesion was proved by the result of slight pressure of the finger

on the seat of the "thrill"—cessation of fremitus, and of souffle, and diminution in size of tumour. This last sign, as Terrier has shown, is absolutely pathognomonic of arterio-venous communication (*phlébartoërie*).

With regard to *etiology*, in this case, there was no trace of angioma, but there was a history of a fall, with head-injury, four years previously, and a small cicatrix above the right superciliary arch marked a sutured wound.

Although the tumour was stationary and caused no trouble, Broca looked on it as a perpetual menace (hæmorrhage, ulceration, &c.)

The treatment should be directed to the spot where the "thrill" exists. Remove or obliterate the communication, and the radiating dilated vessels will return to normal size and condition. Having made compression by means of an elastic band applied round the head, Broca removed an elliptical piece of scalp. No ligation was made, but the sutures were passed under those vessels whose open mouths were visible in the cutaneous wound. The wound was sutured closely with silk, elastic band removed, and dressing applied.

The specimen was pinned out on a plate, and Chifoliau dissected it. He found four radiating arteries forming a cross-roads, which again opened into an enlarged vein. This arterial multiplicity accounts for the cirroid appearance of the tumour in the scalp.

Angiomata of scalp sometimes take on cirroid characters; in these cases there are multiple arterio-venous communications, and the tumour is of a graver character than the one mentioned above. The sign of Terrier will be absent. The same principle of treatment is applicable—viz., attack the seat of the arterio-venous communications, i.e., the principal mass of the primitive angioma, and the cirroid modifications of the vessels will disappear.—(*Journal de Chir.*, Bruxelles, Avril-Mai, 1901.)

Late and Prolonged Cerebro-Spinal Symptoms following Cocainisation of the Spinal Cord.—Daudois performed, on 12th January, 1901, perineal section in a patient, aged 57, for traumatic rupture of urethra, with abscess. There were symptoms of infective absorption from the decomposing urine, and, in addition, he had cardiac and pulmonary troubles, so that general anaesthesia was not considered advisable. Intraspinal injection of cocaine (2 cgm.) was given. The operation was performed without haste, the patient, in good spirits, holding the scrotum out of the way. He was very well for the first four or five hours after the operation, when there supervened the phenomena which habitually follow intraspinal injections of cocaine: slight elevation of temperature, acceleration of pulse (120), some bilious vomiting, headache. In addition, he had unusual nervous phenomena (twitching, delirium); but all these toxic phenomena had disappeared by the next day. From this time the symptoms of pre-operative infection rapidly declined. All went well till the *eighth day* after operation, when the patient complained of dull pains in the pelvis and lower limbs. The next day there was complete paraplegia, but sensibility was present. At the same time cerebral phenomena appeared and became accentuated:—Insomnia, mild delirium; then violent delirium, with crises, resembling at times mania, at others dementia; absolute unconsciousness (*inconscience*). There was neither elevation of temperature nor presence of other morbid symptom. The nervous symptoms remained unchanged for more than a month.

On 16th February slight movements were possible in lower extremities, delirium ceased, and sleep and consciousness returned. On 5th March patellar reflex noted, but walking without help was possible only after two months. He has now returned to his previous state of health; micturition is normal, and the perineal wound healed by first intention.

Daudois considers the nervous phenomena as due, not to the general infection from the urine, but to the cocainisation of the cord. This again is not toxic, but has probably caused some disturbance in the nutrition or functioning of the nerve cells or fibres.—(*Journal de Chir.*, Bruxelles, Avril-Mai, 1901.)

DISEASES OF THE SKIN.

By W. R. JACK, M.D., B.Sc.

Vaccinal Lupus.—Little (*British Journal of Dermatology*, March, 1901) reports the case of a child vaccinated at 4 months with calf lymph, in whom the two lower sores remained unhealed, while in from four to six weeks bleeding nodules appeared in the site of the wounds, which exuded a discharge of "blood and corruption," persisting for some years. Except that one brother died of phthisis at the age of 3, there was no family history of tubercle. The child was shown in January, 1900, when a patch of lupus was found in the situation of the two lower vaccination scars. The axillary glands were slightly enlarged and firm. There were no general symptoms. The patch was excised, and covered by skin grafts taken from the thigh. A year afterwards (at the age of 9) there was no recurrence, and the child was in perfect health. In a guinea-pig, inoculated on the inner side of the left thigh with an emulsion of the diseased tissue, the left superficial inguinal glands and the left sub-lumbar glands were found after six weeks to be enlarged and caseous, while those on the right side were quite normal. Tubercle bacilli were present in large numbers in the inguinal glands, although they were not found in the lupus patch, which, however, showed cell-infiltration and typical giant-cells.

Little considers this to be a case of inoculation of tubercle associated with vaccinia. The nodules developed within six weeks in the site of the vaccination punctures. The period of incubation, therefore, corresponds fairly closely with that of other forms of tubercular cutaneous infection following inoculation, such as circumcision wounds. Experiments made to decide whether tubercle can be conveyed by vaccine lymph have never resulted in the demonstration of tubercular bacilli in the vaccine matter taken from tubercular subjects. It has, therefore, been supposed that the skin is specially resistant to tubercle, but this protection has been shown to be very incomplete. Cases of lupus on the site of vaccination are, however, very infrequent, and it may be doubted whether the virus was inoculated with the lymph or by accidental contamination.

Little gives an abstract of four well-established cases, and refers to two more doubtful. He also quotes Colcott Fox's notes on three additional cases of his own, which are suggestive of a possible coincident inoculation, although not conclusive. He considers it surprising that cases of accidental inoculation of tubercle should not have been more frequently observed in connection with vaccinia.

Etiology of Lupus Erythematosus.—Von Poór (*Dermatol. Zeitsch.*, April, 1901) commences an article on this subject by a *résumé* of the various views of authorities, pointing out the invariable absence of tubercle bacilli and the failure of attempts at inoculation. He points out the recent tendency to regard the eruption as the consequence of tuberculo-toxins, advocated especially by the French school, and summarises the arguments in favour of its tubercular origin as follows:—

(1) Lupus erythematosus occurs mainly in those who are the subjects of tubercle, or in whose families tubercle can be shown to exist.

(2) Upon the injection of tuberculin, it usually manifests both a local and a general reaction.

(3) Giant-cells are frequently found upon microscopic examination.

(4) Transitional forms are to be found between lupus erythematosus and the undoubtedly tubercular lupus vulgaris, and tubercular foci have been not uncommonly found in lupus erythematosus (the lupus erythematoïdes of Leloir).

He proceeds to examine these arguments:—(1) Roth's series of 250 cases, of which 158 were found to have a probable connection with tuberculosis, is shown to rest upon very slender evidence. The association can also be

accounted for on the theory that an organism weakened by tuberculosis, or other chronic infective process, is less capable of resistance to other pathogenic influences. The statistics of Kopp and Riehl are directly opposed to those of Roth. In 21 autopsies Riehl only twice found tuberculosis of internal organs, and of 15 which he collected from the literature there was no trace of it in 10. Von Poór also gives the details of 12 cases observed by him, in none of which was there any direct combination of tuberculosis and lupus erythematosus, while 9 were entirely free of tubercular taint, even in the widest interpretation. The majority, however, were exposed in their occupations to high or to rapidly varying temperatures.

(2) The reaction to tuberculin cannot be considered as an absolute proof of tuberculosis. Darier admits that in lupus erythematosus both local and general reaction are very irregular in their occurrence. Bangs and Schneider have shown that it is often absent in the advanced stage of tuberculosis, and it has been observed in other diseases, such as leprosy and actinomycosis.

(3) The presence of giant-cells is no longer regarded as pathognomonic of tuberculosis. They have been demonstrated in syphilitic papules, in osteomyelitis, rhinoscleroma, sarcoma, nasal polypi, and most of the granulomata. They cannot be considered as a proof of the tubercular nature of lupus erythematosus.

(4) The initiatory hyperemic stage of lupus vulgaris may be mistaken for lupus erythematosus; but leaving such errors out of account, it must be accepted that lupus erythematosus and lupus vulgaris may occur in combination, as described by Leloir. The cases, however, are rare, and do not prove the relationship of the two diseases. Carcinoma may have its origin in lupus vulgaris, and it has even been recorded in combination with lupus erythematosus. It is more likely that lupus vulgaris arises on the parts attacked by lupus erythematosus, as on a *locus minoris resistentie*. In the first stage of lupus erythematosus the vessels of the papillary layer are dilated, but afterwards contracted, and the retardation of the blood-stream would thus favour the deposition of tubercle bacilli brought by the circulation from other parts.

Lupus erythematosus, therefore, cannot be regarded as an affection of tubercular origin, as toxi-tuberculide.

Von Poór then draws attention to the etiological factors assigned by other authorities, mentioning particularly exposure to extremes of temperature in connection with the common situation on the face and hands, and pointing out the frequent tendency to spreading at the periphery, which cannot be explained on the toxin theory. He shows that as various forms of irritation of the skin may produce the same disease, so lupus erythematosus may occur during pregnancy, as the result of shock, or of frequent variations of temperature, and that it may disappear quickly and spontaneously, or resist all treatment for years. He concludes (1) that its cause cannot be traced either to a direct tuberculous infection produced by the bacillus, or to an intoxication produced by the bacillary products; (2) that it is a disease probably not of uniform etiology, but that it is produced by both peripheral and central irritations of the skin varying both in kind and intensity.

Mercury in the Treatment of Lichen Planus.—Lusk (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1901) reports 17 cases treated in this manner. Only 3 are stated in any detail. In all of these the usual methods of treatment had produced some improvement, but had not led to cure. The administration of half a grain of perchloride thrice daily, with the local use of a 3 per cent carbolic ointment, led in two cases to a rapid cure, and in the third to marked improvement. In all the other cases except one, where the result is not stated, either cure or improvement followed in a few weeks, whether the disease was of long or short duration. He considers that the treatment is specific, and that its results prove lichen planus to be a syphilide, "the effects of either hereditary or acquired syphilis on the nerves." In two of his cases there was positive evidence of syphilis, while in one there was a somewhat indefinite syphilitic history.

Books, Pamphlets, &c., Received.

- A System of Physiologic Therapeutics, Edited by Solomon Solis Cohen, A.M., M.D. Vols. I and II: Electrotherapy, by George W. Jacoby, M.D. (Book I: Electro-physics—Apparatus required for the Therapeutics and Diagnostic Use of Electricity; With 163 Illustrations. Book II: Diagnosis—Therapeutics; Illustrated). London: Rebman, Limited. 1901. (10s. 6d. per vol.)
- The Student's Manual of Venereal Diseases, by F. R. Sturgis, M.D. Seventh Edition, Revised and in part Rewritten, by F. R. Sturgis, M.D., and Follen Cabot, M.D. London: Rebman, Limited. 1901. (6s. net.)
- Uterine Fibromyomata, Their Pathology, Diagnosis, and Treatment, by E. Stanmore Bishop, F.R.C.S. Eng. With 49 Illustrations. London: Rebman, Limited. 1901. (15s. net.)
- A Practical Treatise on Fractures and Dislocations, by Lewis A. Stimson, B.A., M.D. Third Edition, Revised and Enlarged. With 336 Illustrations and 32 Plates in Monotint. London: Henry Kimpton. 1901. (25s. net.)
- Diseases of the Stomach, by John C. Hemmeter, M.D. Second Enlarged and Revised Edition, with New Chapters and Additional Illustrations. London: Henry Kimpton. 1901. (30s. net.)
- Progressive Medicine, Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. II (June, 1901). London: Henry Kimpton. 1901.
- A Manual of Medicine, Edited by W. H. Allchin, M.D. Lond., F.R.C.P., F.R.S. Ed. Vol. III: Diseases of the Nervous System. London: Macmillan & Co., Limited. 1901. (7s. 6d. net.)
- The Archives of Neurology and Psychopathology. Vol. III, Nos. 1 and 2. Utica: State Hospitals Press. 1901.
- Glasgow Hospital Reports, Edited for the Committee by George S. Middleton, M.A., M.D., Henry Rutherford, M.A., M.B., C.M., and Walter K. Hunter, M.D., D.Sc. Vol. III. With 50 Illustrations. Glasgow: James Maclehose & Sons. 1901.
- A Treatise on Orthopædic Surgery, by Royal Whitman, M.D. Illustrated with 447 Engravings. London: Henry Kimpton. 1901. (25s. net.)
- A Manual of Practical Hygiene for Students, Physicians, and Medical Officers, by Charles Harrington, M.D. Illustrated with 12 Plates and 105 Engravings. London: Henry Kimpton. 1901. (21s. net.)
- Matière Médicale Zoologique: Histoire des Drogues d'origine Animale, par H. Beauregard, Révisé par M. Coutière, avec Préface de M. D'Arsonval. Paris: C. Naud. 1901. (12 fr.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 24TH AUGUST, 1901.**

	WEEK ENDING				
	July 27.	Aug. 3.	Aug. 10.	Aug. 17.	Aug. 24.
Mean temperature, . . .	No record.	56·4°	55·1°	59·5°	58·2°
Mean range of temperature between day and night, . .	No record.	25·9°	19·4°	15·9°	22·3°
Number of days on which rain fell, ...	6	2	7	5	1
Amount of rainfall, . ins.	1·21	0·05	0·70	0·85	1·12
Deaths registered, . . .	271	314	306	306	271
Death-rates, ...	18·4	21·4	20·8	20·8	18·4
Zymotic death-rates, . .	5·2	6·8	6·8	5·7	4·4
Pulmonary death-rates, .	3·2	3·5	3·0	4·1	3·9
DEATHS—					
Under 1 year, ...	99	121	115	100	81
60 years and upwards, .	32	41	45	52	46
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	11	7	9	11	8
Scarlet fever, ...	4	1	2	2	1
Diphtheria, ...	1	...	1	1	...
Whooping-cough, . . .	5	19	9	10	6
Fever, ...	...	...	2	2	4
Diarrhoea, ...	56	73	77	58	45
Croup and laryngitis, .	...	...	1	1	...
Bronchitis, pneumonia, and pleurisy, ...	29	33	21	30	28
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Diphtheria and membranous croup, ...	5	5	9	9	7
Erysipelas, ...	17	13	15	18	23
Scarlet fever, ...	36	42	57	48	68
Typhus fever, ...	...	1	1	...	...
Enteric fever, ...	10	10	18	22	33
Continued fever, . . .	...	...	...	...	...
Puerperal fever, . . .	1	3	2	2	1
Measles,*	191	157	169	152	153

* Measles is not notifiable.

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ORIGINAL ARTICLES.

SURGICAL DISEASES OF THE KIDNEY: THEIR
GENERAL SYMPTOMATOLOGY AND PHYSICAL
DIAGNOSIS—WITH ILLUSTRATIVE CASES.

By DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 183.)

(b) *Pyuria*.—The appearance of pus in the urine, like the presence of blood, is a symptom of many different lesions in the urinary tract. It may emanate from any portion of the apparatus, or may gain an entrance to it from neighbouring parts. Pus appears in amounts to be appreciated by the microscope only, or it may escape in very large quantities, so as to form a considerable bulk of the evacuation. It is unnecessary to remark here upon the methods used in the detection of pus, and the means employed to distinguish it from other urinary deposits. This information can be got in medical and surgical text-books.

The *gross physical characters of pus* vary considerably. It may be present in an acid urine in small quantity, when it deposits as a slight cloud at the bottom of the test-glass; it may be mixed with mucus and elude detection, except by the microscope; when abundant and in an

alkaline urine it may form a copious yellowish-white creamy sediment, or it may be curdy and contain flakes. The appearance of pus is only a sign. It is not the physical properties of the pus that is of importance, but rather the bacteriological conditions which are associated with its presence, and, unfortunately, the former afford no clue to the latter. Besides detecting the presence of pus in the urine, the clinical observer must determine the micro-organisms giving rise to the formation of the discharge. By the microscope alone the presence of bacteria may be demonstrated, but in order to reveal their identity cultivations are necessary, and perhaps these methods may require to be supplemented by inoculation experiments upon animals. The detection of pus in the urine is seldom of itself sufficient to guide the surgeon to a conclusive diagnosis, although by it alone information may be obtained to assist him considerably in his enquiry. But when the special characters of the pus are studied in conjunction with the circumstance attending its escape, and in view of the general features of the case, little difficulty will be experienced in discovering the nature and position of the morbid lesion.

Examination of the urine.—The appearance imparted by the addition of pus varies according to the amount present, and the character of the other morbid constituents in the urine. In cases where the pyuria is due to septic lesions of the kidney only, the pus appears as a thick, opaque, creamy sediment, which on standing is rapidly and almost completely precipitated from an acid urine, the supernatant fluid is comparatively clear, is free from mucus, and does not decompose rapidly. On the other hand, where the pus is derived from the bladder alone, or in conjunction with a renal lesion, pus is not deposited quickly; when it falls it is precipitated along with glairy mucus, the urine in which it remains partly suspended is alkaline, and decomposition often begins before the urine escapes from the bladder. The time at which the pus appears in the stream should be ascertained if possible. The appearance of pus at the beginning of micturition, during the whole flow, or at the end of the act only, lends additional significance to the symptom. The precaution to ascertain the moment at which morbid constituents appear in the stream has already been referred to in connection with hæmaturia. Sir Henry Thompson, in his *Clinical Lectures on Diseases of the Urinary Organs* (eighth edition, pp. 12, 452), gives the following valuable suggestions:—

“Whenever you want a specimen from your patient to examine, do not tell him to send you a bottle of it, passed in the usual way, or you will get a mixture often of doubtful value. What you require is the secretion of the kidneys *plus* only anything there may be in the bladder; but you also have to avoid the presence in it of any secretion which originated in the urethra. Make a point of demanding that the patient should first pass two or three tablespoonfuls through the urethra, so as to sweep out whatever may happen to be there (which may be thrown away, or be put into a separate bottle), after which you will get a pure specimen for examination—at anyrate, one of which you will know the source. You will have the renal secretion *plus* only whatever deposit may be produced in the bladder. Suppose the patient has gleet or chronic prostatitis, there will then be a quantity of mucopurulent matter in the urethra. If all this be carried into one vessel with the urine, how will you determine the different products, and decide, by the eye or by the microscope, what has come from the urethra, what from the prostate, and what from the kidneys? You cannot do it: but if you get rid of the source of error by flushing the urethra, so to speak—that is, by passing the first two or three tablespoonfuls into a wineglass, while all that follows is passed into a separate vessel such as a tumbler, you will have in the latter a sample of urine that can be relied upon for examination.

“The necessity for avoiding admixture of urethral products with urine, in order to insure a pure specimen, has been enjoined, and the mode of attaining the object by the use of two glasses. It is sometimes quite as essential to avoid its admixture with products of the bladder, and it is not possible to make an absolute diagnosis, in some few exceptional cases, without following the method in question. When, therefore, it is essential to obtain a pure specimen of the renal secretion free from the presence of vesical products, I pass a soft flexible catheter of medium size into the bladder—the patient standing—draw off all the urine, carefully wash out the viscus by repeated small injections of warm water, and then permit the urine to pass, as it will do, *guttatim*, into a test-tube, or other small glass vessel, for purposes of examination. The bladder ceases for a time to be a reservoir; it does not expand, but is contracted round the catheter, and the urine percolates from the ureters direct. The ureters are virtually lengthened as far as to the glass. Thus is obtained a specimen which, for appreciating albumen, for determining reaction, and for freedom from vesical pus,

and even blood, and from cell-growths of vesical origin, is of considerable value, and has sometimes furnished me with the only data previously wanting to accomplish an exact diagnosis."

The clinical significance of pyuria in many respects resembles that of hæmaturia, but differs from it in so far that an accurate diagnosis of the portion of the urinary tract from which the pus comes is more difficult to make.

Pus from the urethra, as in hæmaturia from the same situation, escapes independently of micturition, or is only mixed with the first few drops of urine; in fact, together with the presence of pain in the region, is usually sufficient to determine its origin. In such instances the quantity of pus is usually small, and appears in flakes or threads. These are casts of ducts leading into the urethra, or threads of pus and macerated epithelium from granular patches swept away in the first portion of the stream. These urethral casts or shreds must not be mistaken for somewhat similar discharge occasionally observed in tuberculosis of the urinary tract. When urethral in origin they can be expressed from the canal before and after micturition. When the inflammation is situated in the posterior part of the urethra, it may give rise to vesical irritation and some obstruction to micturition. The diagnosis can generally be cleared up by pressure upon the urethra in the perineum or rectum towards the end of micturition, when pus is found to exude.

It is otherwise in *catarrh of the bladder*, in which case the pus only escapes mixed with the urine, it is more or less abundant, and is accompanied by a number of large vesical epithelial cells. Vesical catarrh is generally associated with considerable pain on micturition and inability to retain urine for any length of time. A small quantity of pus in an acid urine is not necessarily of much significance, as it may be due to the slight catarrh seen so frequently in uterine and ovarian disease, but it may also be one of the earlier symptoms of tuberculosis. When the irritation is more severe, and especially when due to the action of micro-organisms, not only is the quantity of pus increased, but much mucus may be secreted. So long, however, as decomposition does not occur, the pus and mucus separate as distinct deposits on standing, but if the urine becomes alkaline before evacuation, the pus becomes thick and glairy, and remains suspended along with the mucus. To establish the fact that there is cystitis is not

sufficient; the cause of the altered condition must be determined, and this may be done by a cystoscopic examination.

If it has been ascertained that there is no primary urethral lesion, and no disease of the bladder, inflammation or suppuration of the prostate, no pelvic or other abscesses opening into the urinary tract, then we must proceed to enquire whether the pus is proceeding from one or from both ureters. This may be done by inspecting the bladder with the cystoscope or by catheterising the ureters.

Having discovered that pus is flowing with the urine from the ureters, the next point to clear up is the nature of the renal lesion. The most important diseases of the kidney which are characterised by pyuria are pyelitis, pyonephrosis with or without calculus, suppurative nephritis, tubercular disease, and cystic disease when the cyst has suppurated.

The question may now be asked—Is there, by observing the urine, any means of distinguishing one form of renal pyuria from another? To some extent the microscopical appearance of the corpuscles may serve as a guide. When the pus-cells are round, well developed, the contents of the corpuscles clear, and, on addition of acetic acid, show well-marked nuclei, the presumption is that they are of recent origin, and have formed on a mucous surface. But if the cells contain a considerable quantity of finely granular particles, which impart a cloudy appearance to the protoplasm, if the cell-wall be irregular and ill-defined, and the nuclei few in number and small in size, the suppuration is probably deep seated, and due to chronic inflammation.

When pyuria is a consequence of *inflammation of the pelvis and calices of the kidney*, being mixed with an acid urine, the pus, on standing, usually precipitates rapidly, separates clearly from the supernatant fluid, and if the inflammation be very acute, or if a calculus be present, the pus may occasionally be mixed with blood. A careful record must be kept, not only of the relative, but also of the absolute quantity of pus, as sudden and marked variation in the amount is one of the most certain indications of partial or complete obstruction of the ureter from which the pus is flowing. If the disappearance of pus from the urine be associated with increase in the lumbar swelling, and followed by the sudden escape of a large quantity of purulent urine, coincident with a subsidence of the swelling, then it is clear that the ureter has been blocked for a time and its patency restored.

As the result of *calculous pyelitis*, prior to the appearance of pus, the urine is usually observed to contain an abundant quantity of mucus, which forms a bulky, tenacious mass. So long as the urine remains acid, the mucus is readily deposited from the urine. This is especially the case when the calculus is composed of oxalate of lime. Before pyuria is observed, microscopic examination of the deposit may demonstrate the presence of large spheroidal granular cells, degenerated epithelium, and a few blood corpuscles. When the pyelitis, which in the early stage is simply the result of mechanical irritation, has existed for some time, the quantity of pus increases, and the mucus disappears. So long as the urine remains acid, and no vesical disturbance arises, micturition is not unduly frequent, and the urine has not an offensive odour. But if there be frequent or considerable accumulations in the pelvis of the kidney as a result of obstruction, the fluid so retained is liable to septic infection, and if the organisms have the property of decomposing urea, the urine rapidly becomes alkaline and glairy, has an offensive odour, and is in almost all respects similar to the urine in cystitis.

When *suppurative nephritis* arises as a complication of the retention of decomposing urine, or as a sequence to a chronic pyelitis, the course of the disease is usually very rapid, and the diagnosis is not difficult. The history of some obstruction to the flow of urine is usually found, whether it be from stricture of the urethra, enlarged prostate, atony of the bladder, vesical calculus, tumours of the bladder, tuberculosis, disease of the spine, or other cause by which the bladder is kept in a distended state, and its contents rendered liable to decomposition.

When decomposition of urine in the pelvis of the kidney occurs, pyelonephritis soon manifests itself, sometimes, but not usually, by severe pain in the loins, aggravated by pressure upon the abdominal walls over the kidney. Although pain in the renal region is rare, the patient suffers from spasm at the neck of the bladder, and pain along the tract of the ureter.

The urine does not present any characters of diagnostic value, but varies much according to the individual case. When the inflammation primarily involves the pelvis, and has spread rapidly from it to the kidney tissue, the urine, although purulent, remains acid for some time, and is less abundant than normal. The urine may, however, present the characters indicative of chronic Bright's disease, namely,

polyuria and albuminuria, with diminution in the quantity of urea and the presence of tube-casts.

Pyelonephritis is usually the result of an unhealthy state of the bladder. Consequently, in that disease the urine, although it may be acid when it escapes from the ureter, becoming mixed with the contents of the bladder, decomposes, is passed alkaline, has an offensive odour, and contains a large quantity of mucus, epithelium, pus, and triple phosphates. When there are no acute or chronic organic changes in the kidney, the quantity of albumen is regulated by the amount of pus or blood; but, as not infrequently chronic Bright's disease also exists, there is an albuminuria independent of these constituents, so that no relationship exists between the amount of pus or blood and the quantity of albumen.

The diagnosis of pyelonephritis from suppurative nephritis must rest largely upon a careful consideration of the etiological facts of the case. The constitutional symptoms of the two diseases are practically the same. In the former, however, pyuria precedes, in the latter it succeeds, the other symptoms. If the abscess in the kidney ruptures externally, or forms a perinephritic abscess throughout the course of the case, pus may not appear in the urine; but should the abscess attain a considerable size, and rupture into the pelvis, ureter, or bladder, the sudden appearance of a large quantity of pus in the urine may clear up the diagnosis.

In *pyonephrosis* there is evidence both of suppuration and of obstruction. In some cases suppuration precedes the obstruction, in others the opposite sequence of events occurs, as when a hydronephrosis becomes inflamed, while in a third class the two conditions develop *puri passu*.

In pyonephrosis there is a characteristic renal swelling, elastic, fluctuant, and varying in size from time to time, much in the same way as in hydronephrosis. Together with these symptoms, there is a discharge of pus in the urine, or evidence of its retention, manifested by increase in the renal swelling, and more severe pain in the lumbar region, which is aggravated by pressure in front, but relieved by pressure from behind. There may be also symptoms of a more urgent nature, indicative of systemic poisoning, either from non-elimination of the urinary constituents or from absorption of infective material.

In pyonephrosis the quantity of pus in the urine varies from day to day, according to the posture the patient occupies and to the nature of the obstruction. The changes

in the condition of the urine are determined by the same circumstances as those noticed in cases of pyelitis and pyelonephritis.

In *cystic disease* the urine has the characters of chronic interstitial nephritis; it is pale, copious, of low specific gravity, and may contain coarse granular tube-casts. There may be copious hæmaturia, and should the cysts suppurate or pyelitis be established, pus may escape through the bladder, and in hydatid cysts of the kidney, echinococci or hooklets may appear in the urine.

In *tubercular disease* the urine furnishes important information, and in all cases the urine should be carefully examined prior to the employment of instruments to explore the bladder or ureters. Although tuberculous bacilli are classified as non-pyogenic, and properly so, in many cases of tubercular disease, before mixed infection has occurred, large numbers of leucocytes, not distinguishable by the microscope from pus, may be found. In pure tuberculous disease the urine is acid and sterile from pyogenic microbes. For diagnostic purposes it is, therefore, necessary to draw off through a sterilised catheter a quantity of urine, and to make cultures. The presence of pyogenic micro-organisms does not exclude the possibility of the disease being tuberculous, but their absence greatly strengthens the presumption.

As the disease advances, the odour of the urine, as a rule, becomes more and more offensive; the fluid deposits large quantities of mucus and triple phosphates, and, on examination, it is found to be highly albuminous. Occasionally, while the urine is pale and of low specific gravity, there may be evidence of retention on the diseased side, as shown by increase in the renal swelling, with, perhaps, indistinct fluctuation and pain, accompanied by general constitutional disturbance, or there may be complete suppression, death being ushered in by uræmic symptoms.

In addition to the diagnostic points already indicated, the detection of the tubercle bacillus in the urinary *débris* is of great value. It is when tuberculous lesions begin to break down that tubercle bacilli are most abundant, and sometimes their number is very large. Several examinations are required before it can be concluded from negative results that the case is not tuberculous.

Besides the detection of the tubercle bacillus, it is necessary to determine whether the disease is on one or on both sides. Several times the writer has had occasion to examine by ureteral catheterisation cases of tuberculous pyelitis in which

it was considered of importance to determine the extent to which the disease had involved one or both kidneys. Catheterisation can only determine the organ to which the tuberculous disease is limited; it cannot indicate the extent of the tuberculous lesion in the affected organ, but to make sure that one kidney is free from disease is a point of importance. The first time he succeeded in doing this was in 1886, when a case was examined, and it was clearly shown that the tuberculous lesion was limited to one kidney.

(c) *The other abnormal constituents in the urine* which require notice are—the crystalline deposits, micro-organisms, and the albumens and toxins.

On account of the tendency of calculi to become lodged in dilated portions of the urinary apparatus behind the natural narrowings, where they increase in size and become impassable, such deposits must be looked upon as important causes of disease.

I. The *crystalline deposits* require only to be mentioned in so far as their presence throws light upon the composition of renal calculi. They may be divided into those which are found as normal constituents of urine, and those which are not seen except in morbid conditions. The reaction of the urine, the amount of free acid or alkali in it, determines to a great extent the deposit of crystals either before evacuation or after, and it must be remembered that the kidneys are of our organs the most vicarious. They possess the power of temporarily fulfilling the office of other organs in a remarkable degree, and as a consequence the excretion is most variable in its composition, even within the limits of health. It is only when an alteration or departure from the normal type becomes persistent and incapable of a physiological explanation that conclusions can be deduced from it.

1. Daily about one gramme of *uric acid* is excreted, and it may become deposited from the urine before the excretion is voided, by reason of an over-acid reaction of the urine, probably from an excess of acid sodium phosphate, and in health the crystals may be thrown down as a consequence of acid fermentation or by the addition of an acid subsequent to expulsion. A free acid combines with the alkalies of the urates, and sets free the uric acid. Therefore, it is not to be inferred that there is an excess because uric acid is found as

a deposit in urine which has stood for a time. Dr. Bence Jones long ago showed that the urine which is most acid, and which deposits the largest sediment, may contain relatively little uric acid, while in other samples which have a much higher percentage the urine holds it in perfect solution, and may have but a feeble acid reaction. All urines deposit uric acid when sufficient time is allowed for acid fermentation to take place. This usually means a lapse of many hours. If a deposit be thrown down within six hours of the urine being voided it may be taken as an indication that the urinary conditions favourable to the formation of a stone are present.

The deposit of uric acid in urine may be said to depend upon—

(1) Decrease of temperature.

(2) Relative increase in the quantity of uric acid in the urine from over rapid tissue waste, from an over supply of nitrogenous food, from improper digestion and assimilation, from imperfect elimination of nitrogenised excretions by the skin, bowels, and lungs, and by injuries to the kidneys.

(3) Increased acidity of the urine, either by conversion of the basic phosphate of soda into the acid phosphate, by the formation of free organic acids in morbid conditions of the urine, or by acid fermentation brought about by micro-organisms.

In many diseases excess of uric acid is a marked symptom ; in most febrile conditions, in functional disorders of the liver, in conditions giving rise to dyspnoea, in gout, and in rheumatism.

2. *Urates*, generally known as urates of ammonia, but containing traces of urates of lime, soda, and magnesia, are the most common and the least important deposits. They seldom form the central nucleus of a concretion, but may cause considerable enlargement of a smaller stone composed of uric acid or oxalate of lime. The causes of deposits of urates are those of the uric acid deposits. If the urine be concentrated the urates are deposited on cooling, and their presence indicates either a deficient quantity of water excreted or an absolute increase in the quantity of the salts in the urine.

An increase in the excretion of urates is an indication of increased tissue metamorphosis or an imperfect functional activity of other eliminating organs, as seen, for example, in cardiac, pulmonary, or hepatic diseases, in febrile diseases, or after undue physical exertion in warm weather.

3. *Oxalate of lime* is probably never present in healthy urine, although the constituents from which it is derived are there. It is believed that the deposit is due to over oxidation of the uric acid formations, although the manner in which the evolution of oxalic acid in the urine occurs has not been satisfactorily explained. Lime united with phosphoric or other feeble acids is always present in the urine, and with the lime the stronger oxalic acid combines to form the very insoluble oxalate which is thrown down, while the other acids are set free. Consequently, at an early stage the deposit is found in a tolerably acid urine, which may cause much irritation in the urinary passages. The acid set free by the oxalic acid in turn combines with the alkalies in the urates of soda and ammonia and liberates the uric acid. Hence, uric acid and oxalate of lime deposits are frequently thrown down together, but while the latter may also appear along with alkaline phosphates, the former do not. The significance of oxaluria depends upon whether it appears in concentrated urine or in urine of low specific gravity. In the former instance its presence is probably due to decomposition of the urates, and, consequently, is of little significance, whereas in the latter, especially if the deposit is constantly present, it indicates a morbid defect.

The causes of oxaluria are not thoroughly understood. It may be readily induced by partaking of certain articles of food, such as gooseberries, tomatoes, or rhubarb, and some authorities even hold that oxaluria depends always upon the existence of oxalates in the diet. According to Bence Jones, oxaluria is due to incomplete oxidation of the carbo-hydrate proximate principles of food. Hence the increased excretion of oxalate of lime in dyspeptic and nervous troubles, and in cases of glycosuria. The circumstance is recognised that oxaluria may persist in certain individuals, even when all articles of diet known to contain oxalic acid or its compounds in any form are avoided, whereas in other persons, even although they partake freely of diet known to be rich in oxalic acid, we fail to find any evidence of oxaluria.

4. The *acid phosphates* daily excreted in the urine may be said to be represented by from three to six grammes of phosphoric acid, and they are held in solution so long as the urinary passages are normal and the urine is acid, but if the tract becomes infected by any of the urea decomposing micro-organisms, the ammonia set free by the decomposition of urea at once causes the alkaline phosphates to be deposited,

consequently a urine depositing phosphates always contains microbes also, and if alkaline at the time of evacuation, independently of the action of drugs or the influence of diet, the conclusion may be come to that there is some infective lesion present in the urinary passages.

Phosphates of lime and of magnesia may be deposited from the urine on account of its feeble acid reaction, and the nucleus of a stone may form, composed of pure calcic phosphate, just as it may be composed of uric acid or oxalate of lime.

The irritation produced by the stone soon weakens the resisting power of the mucous membrane of the urinary tract and predisposes to infection by microbes, and when this occurs the urine generally becomes alkaline, and a secondary deposit of ammonia magnesium phosphates becomes incrustated on the primary stone.

5. In cases of pyuria, *carbonate of lime* is liable to be deposited, from decomposition of oxalates (Ebstein), as a consequence of the action of micro-organisms. Indeed, calculi composed of that salt are almost always associated with pus and other organised constituents in the urine.

(*To be continued.*)

NOTES ON IRIDEREMIA, WITH REMARKS UPON THE HISTOLOGICAL EXAMINATION OF CASES.¹

By LESLIE BUCHANAN, M.D.,
Surgeon and Pathologist, Glasgow Eye Infirmary.

THE word "irideremia" is derived from two Greek words which, taken in the simplest sense, mean "absence or want of iris." By many it is considered as applying specially to that form of absence of the iris which is congenital. Generally speaking, however, it may be considered as synonymous with the word aniridia, which means practically the same thing.

Some writers use the word irideremia in speaking of cases in which the absence of the iris is incomplete, and reserve the word coloboma, which means a mutilation, for those cases only in which less than half of the iris is absent. Such use of

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 3rd May, 1901.

these words must be taken as inaccurate, or at least unwarranted by etymology.

The iris may be absent completely, so far as the unaided eye can tell, as (1) a congenital defect; (2) a result of injury, (including surgical interference); (3) a result of atrophy produced by pressure, as by a dislocated lens, &c.

Traumatic aniridia is moderately frequent, but the form of absence produced by pressure is very rare, and is, moreover, generally incomplete. Congenital absence of the iris is seen in only 1 in 12,000 eye hospital cases, and is generally accompanied by some other defect of the eye, as corneal or lenticular opacities.

Congenital aniridia tends in a marked manner to run in families, and many instances of this fact might be quoted. Only one, however, will be mentioned, namely, that quoted by the translators of the French edition of Mackenzie's work, in which the defect was noted in ten individuals involving four successive generations. It is usually bilateral, but sometimes only one side is affected.

Having seen a case some three years ago in which it was very difficult to decide, from the appearances of the anterior part of the eye, whether the defects found were congenital or not, the writer considered that it would be of interest to investigate carefully a number of cases of aniridia of varied origins and compare the results found.

It is a matter which is certainly of interest from a purely ophthalmological point of view, and which might readily be of importance in a medico-legal aspect, to be able to decide, from the histological appearances, whether or not in any given case aniridia is congenital or is the result of an injury.

CASE I.—The case which in special raised this point was that of an old woman, M. I., aged 70, who came to the Eye Infirmary suffering from an ulcer of the left cornea. The other eye was in all respects normal, and the iris was deeply pigmented.

The ulcer of the left cornea was purulent, and had penetrated deeply when first seen, and there were hæmorrhages under the conjunctiva which rendered it advisable to remove the eye. The corneal ulcer perforated in a pinhole opening on the day before the operation was to be performed, and a minute tag of whitish material appeared in the aperture.

Owing to the diminution of tension of the globe, the eye was slightly compressed during enucleation, but no structure escaped. When examined, it was found that the eye contained

neither an iris nor a lens, and, although exhaustive search was made, no evidence of the past existence of either structure could be found. Close questioning of the patient revealed no history of injury, and the only fact relating to the eye which was discovered was that seventeen years before she had quite suddenly discovered that the sight of the eye was highly defective.

The patient could not remember noticing any peculiarity in the appearance of the eye, nor did she remember of any friend or relation making any remark on the subject.

Histological examination was carried out with great care and with special reference to the discovery of evidence of injury in the past, as it was considered that some injury in childhood, which possibly was now forgotten, might have left a scar or other trace. No such evidence was found, however, and the general appearance of the parts was rather against this theory, as, except for the existence of a recent or comparatively recent localised cystitis, no change, except, of course, in the cornea, was found.

The next question, then, to be taken up was whether or not the lens was absent as a result of injury, say, by a minute punctured wound. The ciliary region was carefully examined with reference to the existence of fibres of the lens ligament, but here also only a negative result was obtained.

Some years before, the writer had made sections of an eye which had contained a chip of iron (sticking in the ciliary body) for forty-nine years, and, remembering that in this case the lens was found to be completely absorbed, these sections were again looked over. In all sections numerous fibres of the lens ligament were easily discovered, and absorbed stains, such as eosin, orcein, &c., well. Similarly, in several other cases where the lens was absent as a result of operation or accident, distinct evidences of the existence of the lens ligament were found, so that it was highly probable that in the present case no lens ligament had existed.

The state of the ciliary body as regards muscle was also examined and compared with the previously seen cases of traumatic aphakia. The muscle in the case of longest duration was markedly atrophic, and in the case at present under consideration was almost entirely replaced by fibrous tissue, the ciliary body being of about the usual size. Little assistance could be obtained from this point. The eye thus gave no evidence of having been injured at any time, and the absence of iris and lens was considered to be of congenital origin rather than the result of injury.

The appearances of the parts about the ciliary body are shown in the photograph of a section (Fig. 1).

It is easily seen that the filtration area is but little changed. The ciliary body itself is, roughly speaking, normal, and is covered by epithelium, which is smoothly and evenly rounded off. The pigment epithelium of the ciliary body bends forwards and almost reaches the filtration area. A thin layer of fibrous tissue, however, intervenes, and lies on the surface of the epithelium. This thin fibrous strand is seen to take its origin from the position which the iris should occupy, and stretches only a short distance into the aqueous chamber. It is totally unpigmented, and lies quite free of the pigment epithelium in most of the sections, and also in some it is seen to have cells apparently of inflammatory origin adherent to it.

This delicate strand may be taken to be an abortive attempt to produce an iris on the part of the mesoblastic structures, whilst the epiblastic structures have made no attempt to pass forwards past the folded position of the ciliary body. It has undoubtedly firm and apparently permanent connections with the ciliary body, but no evidence can be found of endothelial cells on its anterior surface, which is, perhaps, the result of manipulation.

The decision in favour of the congenital as against the traumatic origin of this case was delayed so that further evidence might be brought to bear on the subject.

Several cases of aniridia of undoubtedly traumatic origin were examined, and in each of these evidence of the injury to the iris was distinct. Even after six years (in one case) the stump of iris, which was adherent to the base of the cornea (glaucoma), was still rough and irregular.

In several cases where the injury was recent the filtration area was torn away, the canal of Schlemm being thus put into direct communication with the aqueous chamber, whilst in others the gap from which the iris had been torn was still rough and manifestly torn.

Quite recently a case was examined in which there was no doubt as to the nature of the defect, for the child was seen in infancy and the iris was then completely absent in both eyes, whilst there was distinct opacity of the lens.

CASE II.—The patient was a girl, E. S., aged 8 years, and high tension had developed after an operation (discission) for the removal of the lens. A scleral ectasia developed, and the eye being painful was removed.

Histological examination of this case showed that there was a stump of iris, of small size, pressed forwards against and closely applied to the filtration area. The stump of iris reached only to the extremity of Descemet's membrane, and was covered posteriorly by pigmented epithelium. The photograph (Fig. 2) serves to show the general appearances of the parts, and readily explains the cause of the high tension.

So far, then, as the actual appearances of this case go, the nature of the defect is clear.

The comparative infrequency of congenital aniridia (about 1 in 12,000 eye hospital cases) renders it extremely rare to get a case of this nature to examine histologically, and as the case here recorded corresponds accurately with the five cases which the writer is aware of as previously recorded, the findings may be relied upon as fairly constant, that is to say, that in congenital aniridia the defect is not absolutely complete.

To return, then, to the first case, in which doubt existed as to the origin of the defects formed, the evidence produced seems to point to the origin being congenital, in spite of the fact which was previously noted that no such defect had ever been noticed.

This might be accounted for by the fact that the iris of the other eye was deeply pigmented, so that the contrast would not have been so evident as if the iris of the normal eye was blue, in which case the black void in the defective eye would be very striking.

The defects, then, in the first case constitute a very rare anomaly, for rare as irideremia is, congenital aphakia is still more so, and, in consequence, the combination is extremely unusual.

Foster, of New York, in an excellent paper on "Irideremia," remarks upon the lack of uniformity in examining the lens in cases of irideremia, and gives figures which show that in the majority of cases recorded no note is made of the state of the lens, whilst in many of those cases in which a note is made the lens is defective in some respect. This may, however, only indicate that it is mainly in cases which do show lenticular disturbance that the results of examinations are recorded.

If, then, in this case the lens is really absent as a congenital defect, and there is no evidence of the existence of a cicatrix such as was found by Rindfleisch in his case, the theory of





FIG. 1.



FIG. 2.

Mantz will not hold good, and one of the other numerous theories must be applied.

The theory of Steiler, that the defective development is due to too early obliteration of the vessels of the anterior vascular capsule of the lens, would certainly apply to this case as readily as any more recent conjecture.

The congenital absence of the lens in an eye well formed in its main features must, of necessity, raise an interesting question as to the true cause of the invagination of the secondary optic vesicle, but so little is at present known of the part played by purely mechanical agencies and effects in development that the matter cannot be taken up here.

As bearing upon the differential diagnosis between aniridia of traumatic and congenital origin, a few remarks may be made upon the varied nature of the injuries to the eye capable of producing the former class of case.

In the vast majority of cases it is an injury with a blunt instrument, as a hand, crust of bread, poker, &c., which is the agent. In most cases there is rupture of the corneo-scleral junction, but occasionally the cornea is cut across.

In a smaller number of cases the iris is removed completely, in consequence of an injury with a large object with a small point, as an irregular chip of iron, &c. In such a case the impact of the large body probably causes the separation of the iris, whilst the actual removal from the eye is accomplished by a hurried escape of the aqueous humour through a small opening in the cornea.

In one case of this kind seen by the writer two years ago there was only a small linear vertical wound of the cornea, not more than 3 millimetres in extent, and the absence of the iris was complete.

Praun mentions the existence of two recorded cases in which the iris was separated from its ciliary attachment by a blow with a blunt instrument, which caused no external wound of the eye at all. The explanation of these cases is that the separated iris ultimately becomes absorbed after lying in the aqueous chamber for a time.

With regard to traumatic aphakia, also, it is to be noticed that the nature of the injury is very varied. In most cases there is an extensive wound, but the writer has seen two cases in which, after a very minute punctured wound with chips of iron, the lens and its capsule have completely disappeared, whilst fibres of lens ligament remained to prove the past existence of a lens.

In conclusion, the writer desires to acknowledge the kindness of Drs. Robertson and Hinshelwood in giving him access to the clinical record of Cases I and II respectively.

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CHANGES IN THE PERIPHERAL NERVES IN A CASE OF DIABETES MELLITUS.¹

By JOHN WAINMAN FINDLAY, M.D.,
Assistant Physician, Glasgow Royal Infirmary.

Clinical note.—P. G., aged 41, ironfitter, was admitted to Ward 11 of the Glasgow Royal Infirmary, under the care of Dr. T. K. Monro, on 2nd October, 1899, suffering from diabetes. For the previous nine months there had been polydipsia, polyphagia, glycosuria, and polyuria. A little over six months ago he improved under special dieting and treatment, but since the treatment was stopped he has been getting steadily worse. He had pleurisy on the left side three months ago, and the same affection on the right side two months ago.

On admission to the infirmary, the report states that patient is considerably emaciated; thirst is very troublesome; skin is dry, but without eruption; there is dimness of vision and signs of commencing cataract in both eyes; and that there is a slight cough, accompanied by very little spit. There are evidences of softening at both apices. Knee-jerks are absent: there is great muscular weakness, but no disturbance of sensation. For the first fortnight after admission the specific gravity of the urine ranged from 1032 to 1040, the quantity of urine from 70 to 80 oz., and the total amount of sugar from

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 19th April, 1901.

2,900 to 5,100 grains per diem. There was no albumen in the urine.

Under treatment by means of restricted diet and morphia, the specific gravity of the urine rapidly fell to about 1017, and the sugar came down to 630 grains per diem, and on the 26th inst. there was no sugar. Coincidentally with the diminution in the amount of sugar, there were abundant evidences of steadily advancing pulmonary disease and cavity formation, accompanied by a mild degree of hectic fever. Tubercle bacilli were found in the sputum. Sugar was never again present in any quantity, and several times the yeast test failed, though phenylglucosazone crystals could always be prepared from the urine. For the last week of life there was considerable oedema of feet and legs as far up as the knees; slight shooting pains were present in the legs, but there was never any undue tenderness noted in the lower limbs. On 5th November patient suddenly became very weak, perspired profusely about the head, and, after a short time of embarrassed breathing, died.

Professor Workman performed the *post-mortem* examination on 6th November, and the following is his report:—

“The body is very much emaciated, and there is hardly any subcutaneous fat in the abdominal walls. *Post-mortem* rigidity is passing off.

“*Thorax*.—The pericardium is pale, but healthy, and contains about 8 oz. of clear serum. The heart is considerably atrophied, and there is a complete absence of fat from the surface, which makes the coronary arteries—otherwise healthy—appear unduly prominent. All the valvular structures present quite normal appearances, and the aortic and pulmonic curtains are competent. At the commencement of the aorta there is some atheroma and calcareous deposition in the inner coat. In the right lung the superior lobe is almost completely excavated by tubercular disease, and in the middle and inferior lobes there are areas of insufflation pneumonia, with excavation commencing in several points. The tubercular disease has extended to the left lung also, and several abscess cavities are present in both lobes.

“*Abdomen*.—The stomach is normal in size, and contains a quantity of coagulated milk. The mucous membrane presents healthy appearances. The small intestine shows considerable hypertrophy of the mucous membrane of the duodenum and jejunum; the ileum is atrophied, and shows signs of catarrh. Towards the lower end of the ileum are

numerous small tubercular ulcers, and similar ulcers are seen in the upper part of the colon. The liver is dark in colour, and apparently free from fatty changes. Spleen is normal, and the same may be said of the pancreas, but the absence of surrounding fat makes the latter gland appear more prominent than usual. The suprarenals are healthy looking. Kidneys are large and congested, and an interstitial nephritis of mild degree is noted. In the lower part of left kidney is a large cyst, with a thick, opaque wall, and filled with a creamy fluid containing leucocytes. This is evidently due to pus undergoing caseous transformation. The urinary bladder is slightly hypertrophied, but otherwise normal.

"Nervous system.—Brain shows excess of fluid in the soft membranes and ventricles. The cord is examined, and likewise several nerves, but nothing abnormal is detected."

Microscopical examination.—The liver shows well-marked cloudy swelling or albuminous degeneration, which in some places has gone on to fatty degeneration, as shown by the darkening of the granules in sections stained with osmic acid. There is also passive venous congestion and commencing cirrhosis. The kidneys show marked cloudy swelling and commencing fatty degeneration of the epithelium lining the convoluted tubules. Hyaline degeneration is seen in the cells of the straight and collecting tubules, and there is all over a considerable increase in the number of connective-tissue cells and fibres. The pancreas, though normal to the naked eye, presents a slight degree of cirrhosis. Around all the ducts there is a considerable layer of dense fibrous tissue, with few cellular elements; there is in the interlobular areas, and between the individual acini throughout the gland generally, an increase of the connective-tissue, but this overgrowth is most marked in the region of the ducts. In parts, a round cell infiltration may be seen between the acini. Several of the ducts are in a condition of catarrh, and in such cases the lumina are filled with proliferated and desquamated cells. The glandular epithelium throughout is very granular, and as a whole stains well, though here and there small collections of cells have hardly stained at all, suggesting a necrotic condition. Some of the arterioles show endarteritic changes, and also slight thickening of their adventitiæ.

Nerves.—Small portions of nerves were placed in 1 per cent solution of osmic acid for twenty-four hours, after which they were teased and mounted in glycerine. Other pieces of nerves were fixed in 10 per cent solution of formaline in water, or in

Weigert's chrome alum-copper hardening fluid, thereafter being sectioned and stained in different ways.

Numerous degenerated fibres are found in the *pneumogastric trunk* taken from the neck, the proportion of diseased to healthy fibres being about one to four. The myelin of the medullary sheath is seen to be broken up into fragments, or even into globules of small size, giving to the fibres a beaded appearance. Where the fragmentation of the myelin is not far advanced the nerve fibre looks exceedingly like a string of sausages. The neurilemma has remained intact, and where the medullary sheath is absent the continuity of the fibre comes to be represented by the merest thread—the shrunken neurilemma. The chemical composition of the myelin seems also to undergo a change, for the globular remnants of myelin stain more and more faintly with osmic acid as the breaking up process proceeds.

The *sympathetic nerve trunk* taken from behind the carotid sheath shows much the same changes in its medullated fibres as the vagus, but the diseased elements are decidedly more numerous, there being very few healthy fibres left.

The *anterior crural nerve* contains a great many diseased fibres. In the terminal branches there is hardly a healthy fibre to be seen, but higher up in the trunk itself the diseased fibres are less numerous. In longitudinal sections of the anterior crural nerve treated by Robertson's modification of Heller's method,¹ the appearances already noted are seen. In addition, there is observed a finely granular condition of the myelin, even when not broken up into fragments or globules. Further, in quite a number of the fibres the myelin is seen to consist of a series of filter-funnel-like structures, and elsewhere the medullary sheath is represented by a delicate basketwork of dark fibrils.

Fraser and Bruce² describe this "imbricated or funnel-shaped" appearance, in their case of diabetic neuritis, in sections stained with hæmatoxylin and eosine, and count such as evidence of degeneration. Lately, however, Wynn,³ in his researches into the finer structure of the medullary sheath in cats and dogs, has shown this chain of cones to be the normal arrangement. The lattice-like structures in the medullary sheath—the so-called neuro-keratin network—is described by many histologists as the normal framework of the myelin, but is considered by Wynn to be an artefact. In these longitudinal

¹ Robertson, W. F., *Pathology of Mental Diseases*, 1900, p. 20.

² Fraser and Bruce, *Edinburgh Medical Journal*, 1896, vol. xlii, p. 300.

³ Wynn, *Journal of Anatomy and Physiology*, April, 1900.

sections of the anterior crural the individual nerve fibres are more widely separated from one another than normally, and in sections treated with nuclear stains numerous elongated and oval nuclei are seen between and on the nerve fibres. Some of these nuclei on the nerves are of large size, and here and there nuclei in process of division, or but recently divided, may be made out.

There is not, however, so far as I can see, any round-cell exudation around the smaller blood-vessels, and degenerative vascular changes are likewise practically absent. Even in transverse sections of the nerve trunks around the spinal cord in the lumbar and other regions, it may be seen that many diseased fibres exist, and here are found minute vessels with thickened homogeneous walls, staining faintly with eosine, and very evidently affected with the hyaline change.

Fraser and Bruce consider their case of neuritis to be of the type termed by Gombault¹ "*néurite segmentaire periaxile*," and lay considerable stress on the persistence of the axis cylinder. That such occurs in the "imbricated or funnel-shaped" nerves I have no doubt, for, as has been shown, these are perfectly normal fibres. Gowers² says that the axis cylinder in parenchymatous neuritis becomes interrupted at the points where the myelin no longer exists. In these Heller preparations the degenerated nerves eventually come to appear as fine black threads, with little varicosities here and there. In no place is the thread broken through or interrupted. This conforms pretty accurately to Gombault's description of persistent axis cylinders, though, as a rule, axis cylinders don't stain by Heller's method. Nevertheless, in many healthy nerves a black thread can be seen running along the centre of the nerve fibre through the less deeply stained filter-funnel structures, so it is quite possible that these fine varicose threads really are persistent axis cylinders, though the extreme tenuity of the structures and my inability to see a definitely varicosed axis cylinder in sections deeply stained with hæmatoxylin argue against it.

Rectus muscle.—The muscle fibres as a whole are cloudy and granular, and there is considerable variation in their size. Very few fibres show distinct transverse striation, and many of them show a longitudinal striation, with here and there a longitudinal separation of the fibrillæ. The muscle elements are more widely separated from one another than is normal,

¹ Gombault, quoted by Fraser and Bruce.

² Gowers, W. R., *Diseases of the Nervous System*, 1899, vol. i, pp. 65, 84, 147, 163, and 164.

and there is a very considerable increase of the interstitial connective-tissue fibres and connective-tissue cells, the latter in some parts being very numerous. There is also marked proliferation of the nuclei of the sarcolemma. Sections stained with osmic acid show a complete absence of fatty changes in the degenerated muscle fibres. In the case reported by Fraser and Bruce, fine fat granules were found between the fibrillæ of the muscle, and to this they attributed the increase in distinctness of the longitudinal striation.

The *spinal cord* is examined, and throughout there is found an overgrowth of the neuroglia, but in no single column can any special sclerosis be said to exist. The large multipolar nerve cells of the anterior cornua are degenerated, and chromatolysed and excessively pigmented cells are present to the extent of from 12 to 25 per cent. These changes are most marked in the lumbar region, and more evident in the dorsal than the cervical region, but nowhere is any group of cells specially affected.

The *medulla oblongata* is also examined, and there is, I must confess, a great temptation to describe the nerve cells in the floor of the fourth ventricle as degenerate. The cells of the motor nuclei (hypoglossal and vagus) stain well, while the cells of the sensory nuclei—especially those of the nucleus gracilis and nucleus cuneatus—show all the signs of advanced chromatolysis. Dr. W. K. Hunter, however, who has considerable experience in these matters, thinks that these cells are normal, resembling in structure the cells of Lockhart Clarke's column. There is hyaline degeneration of the small blood-vessels of the cord and medulla, but nowhere can I see extravasation of blood into the perivascular canals, as Dickinson has described.

Considerations and conclusions.—In spite of the fact that peripheral neuritis, as an accompaniment of diabetes mellitus, is well recognised and has been much studied clinically, there are remarkably few records of pathological examinations of the peripheral nerves in such cases.^{1, 2, 3, 4, 5} Further,

¹ Fraser and Bruce, *Edinburgh Medical Journal*, 1896, vol. xlii, p. 30.

² Pryce, "A Case of Perforating Ulcers of Both Feet, Associated with Diabetes and Ataxic Symptoms," *Lancet*, 2nd July, 1897.

³ Eichorst, *Revue Neurologique*, 1897.

⁴ Auché, B., "Des alterations des nerfs périphériques chez les diabétiques," *Arch. de med. experiment et d'anat. path.*, Par, ii, 1890.

⁵ Saundby, R., *Lectures on Renal and Urinary Diseases*, 1896, pp. 301, 303.

Dickinson¹ this year, in his lectures on "Considerations touching the Pathology and Relations of Diabetes," does not accept it as proved that the loss of knee-jerk is invariably due to peripheral neuritis, while Williamson² and others have found and described sclerotic changes in the posterior columns of the spinal cord in cases where the peripheral nerves presented healthy and normal appearances.

Now, in this case there were very slight sclerotic changes in the posterior columns of the lumbar and cervical regions, but these changes were at best equivocal, and were only part of a slight general sclerosis. There is, however, a well marked neuritis—mainly parenchymatous, but also interstitial—in the peripheral branches of the anterior crural, abundantly accounting for the loss of knee-jerks and slight neuritic symptoms, viz., muscular weakness, shooting pains, and, perhaps, cedema. Further, there are changes in the rectus muscle such as one would expect to find in any neuritis of some chronicity and intensity.

The occurrence of pulmonary disease, especially phthisis, is common in diabetes (Williamson has found tuberculosis of the lungs *post-mortem* in about 50 per cent of the cases, and Seegen and Frerichs have got almost similar results), but, so far as I am aware, no very satisfactory explanation of this has been yet afforded.

Tubercular disease affects the lung more often than any other organ of the body, so there is little wonder that in diabetes, where malnutrition is so extreme, phthisis should result. But that there are very special reasons why tubercular disease of the lung should have occurred in this, as probably in other cases also, I will attempt to show.

"Phthisis," Gowers remarks, "is a very frequent complication of neuritis, and bears a double relation to the neuritis, sometimes being its consequence and sometimes it cause. Pneumonia, too, frequently causes death in the acute forms of neuritis, and it is difficult to avoid the suspicion that its form and course are determined by coincident neuritis of the pulmonary branches of the vagus, either primary or secondary to the inflammation of the lung."

Now, though merely the trunk of the vagus, and none of the pulmonary branches, were examined by me, I think it can be shown how the suspicion of Gowers, in respect to pneumonia in cases of neuritis, may be an actuality in the present case as regards phthisis. Extensive degenerative changes were found

¹ Dickinson, *Lancet*, 2nd February, 1901.

² Williamson, *Diabetes Mellitus*, 1898, pp. 245, 209, and 210.

in the pneumogastric nerve, and in the sympathetic of the neck. "While it has been proved that perhaps the most important factors in the causation of traumatic pneumonia after section of the vagi in animals are the unconscious inhalation of particles of food and the abolition of the reflex act of coughing, nevertheless it must be remembered that owing to laboured and difficult respiration the lungs become overcharged with blood, and this condition of congestion is followed by serous exudation and even by exudation of blood into the air-vesicles. Then there is probably a partial paralysis of the pulmonary vaso-motor nerves, and an interference with the trophic fibres going to the pulmonary tissues" (Landois and Stirling).¹ This neuritis of the vagi, however, does not, in a chronic condition such as diabetes, so often bring about a septic pneumonia, as happens after section of the vagi, but by interfering with the trophic influences which pass downwards, generally lowers the vitality of all the structures of the lung. By diminishing and in part interrupting the sensory impressions from the mucous membrane, &c., the centripetal or afferent impulses, so intimately concerned in maintaining normal reflex respiration, no longer stimulate the respiratory centre to the same extent. Thus, we have brought about in a lung, the tissues of which are already far from healthy, a further degree of lowered vitality from the interference with the trophic nerves. Then there is the exudation into the alveoli, caused by partial vaso-motor paralysis, which, from diminished sensitiveness of the alveoli and bronchioles, and the sluggishness of the cough reflex, remains to afford a nidus for the tubercle bacilli.

Under these conditions it is not surprising that the tubercle bacilli gain a footing and luxuriantly flourish in the lung. Moreover, this neuritis of the vagus explains how the cough and expectoration are so comparatively slight in tubercular phthisis occurring in diabetic subjects, and how the lung changes are so frequently out of all proportion to the symptoms. A "galloping consumption" is quite intelligible with a diseased vagus, and the want of removal of the caseous matter by powerful expectoration must very quickly lead to infection of the lung all around, and to extensive insufflation pneumonia. In connection with the case under consideration, it is to be remarked that the phthisis was very insidious and rapid in its development, and expectoration was small in quantity in comparison with the active excavation which was going on in his

¹ Landois and Stirling, *A Text-book of Human Physiology*, 1888, pp. 611 612.

lungs. The cough, likewise, is noted in the report as never being severe, and this is further indicated by the fact that during the last weeks of life 5 minims of dilute hydrocyanic acid twice daily sufficed to keep quiet the little cough there was.

Passing on to the cord, we find that chromatolytic and pigmentary changes were present in the large nerve cells of the anterior cornua, this condition being most marked in the lumbar region, and more marked in the cervical than the dorsal region. Apart from Bowlby's¹ description of "marked atrophy" of the motor nerve cells in the lumbar region of the cord, I can find no allusion to nerve-cell changes in diabetes, though degenerations have been described by many observers in the nerve cells in cases of peripheral neuritis, and, experimentally, it has been proved that destruction or degeneration of a nerve cell causes degeneration in its nerve fibre, and *vice versa*. Some say the change in peripheral neuritis occurs primarily in the nerve fibre, others that the nerve cell is the first to suffer.

It is impossible to form any opinion from this case. The demonstration that the terminal branches of the anterior crural nerve contained fewer healthy fibres than the trunk of the nerve itself is in harmony with the usual findings in cases of peripheral neuritis, and seems to imply that the terminal branches suffer first, but one is not so sure if we can infer from this that the nerve fibres suffered primarily to the changes in the nerve cells.

In discussing the pathology of diabetes, Lazarus-Barlow² remarks that of "the pathologico-anatomical changes found in the body of a person dead from diabetes, two alone are probably primary. These are (1) fibrotic and other changes of the pancreas, and (2) tumours and lesions in or about the medulla oblongata and the vagi." In this case the pancreatic lesion was slight, and, in view of Minkowski's experiments, could not have been responsible for the diabetes. No more in this case can the blame be laid on the medulla oblongata. The neuritis of the vagus may have played a part in originating the diabetes, and, in cases where the medullary or vagal lesions really do represent the cause of the diabetes, one is naturally led on to think that, from the common causative factor, phthisis might be regarded as much a part and a symptom of diabetes as glycosuria itself.

¹ Pryce, "A Case of Perforating Ulcers of Both Feet, Associated with Diabetes and Ataxic Symptoms," *Lancet*, 2nd July, 1887.

² Lazarus-Barlow, *A Manual of General Pathology*, 1898, p. 620.

I take this opportunity of expressing my indebtedness to Dr. T. K. Monro for the help he has ungrudgingly afforded me while working at this subject, and for allowing me to make use of his clinical report. I thank Professor Workman for the material examined, and also for permission to quote his *post-mortem* report.

NOTE ON A CASE OF UNILATERAL ACUTE RETROBULBAR OPTIC NEURITIS.¹

By W. ERNEST THOMSON, M.A., M.D., F.F.P.S.G.,
Assistant Surgeon, Glasgow Eye Infirmary.

IN bringing under your notice a case of acute retrobulbar neuritis, I make no pretence of reading a paper on the subject in general. These cases are comparatively rare; other writers, however, and notably Mr. Nettleship, have had experiences more or less like mine. This case is interesting in itself because it was very acute, recovery was rapid and practically complete, and because there was a direct history of exposure to cold, and no personal or family history to account for the complaint.

You will pardon me if I digress so far as to state that Mr. Nettleship divides his extensive series of cases of retrobulbar neuritis into two groups—the symptomatic and the idiopathic. In the symptomatic group are placed those forms in which the inflammation is communicated to the nerve by the various parts amongst which it passes between the chiasm and the eye; in the idiopathic group, those in which a more or less definite history of functional or organic constitutional disease can be obtained, or in which there has been exposure to cold, or in which no cause can be ascertained. Mr. Nettleship's paper will be found in the *Ophthalmic Hospital Reports*, vol. xv, part 1.

Miss R., aged about 21, was sent to me on 28th June, 1900, by her physician, with the complaint that during the last three or four days she had become nearly blind in the left eye. The blindness was associated with pain at the back of the

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 3rd May, 1901.

eye, which became worse on moving the eye, and with neuralgia of the left side of the face.

Personal and family history.—The patient was a stout well-looking young lady, presenting no indications of being in other than thoroughly good health. She had had no illness nor extra hard work. She had cycled a good deal, and was always liable to become much heated on exertion. The family history threw no light on the case.

Clinical history.—On 16th June she went for a drive; the road was hilly, and she walked all the hills and became very much heated. Driving home in the evening the wind was cold and damp, and she had the left side of the face turned to it. That same evening, after getting home, she went out again in the rain and got her feet wet, and failed to change her clothes for an hour after coming into the house.

On the fifth day after this she first noticed a cloudiness of the sight of the left eye, and was very soon able to determine that this cloud was especially dense about any object directly looked at; while the peripheral parts of the field of vision were comparatively clear. The dimness of vision became progressively greater for six days more, when it reached its maximum. In her own words, "she could not distinguish one object from another, but could tell on which side of a room the window was, but in the dark she could not see the light of a lamp or candle."

On the seventh day I saw her, and found the following state of affairs:—

The external appearance of the eyes was normal as regards the cornea and conjunctiva. She had been using belladonna for the left eye, so that the pupil reactions could not be accurately judged. The right pupil reacted to light, and on convergence and accommodation, but reacted less quickly to light admitted to the left eye than did the left pupil to light admitted to the right eye, and this in spite of the fact that the left sphincter may have been slightly under the influence of belladonna. This observation pointed to faulty conduction from the left retina.

Pain was elicited on causing the eyes to turn to the right and left, but especially to the right. There was decided pain on pressing the eye back into the orbit.

The vision was—right, $\frac{4}{3}$ Snellen; left, hand movements at 8 inches.

On ophthalmoscopic examination the patient was unable to distinguish the light from the ophthalmoscopic mirror.

The fundus changes were slight in proportion to the visual

defect. The optic disc was slightly prominent and hazy, and hyperæmic. The veins were over full and more or less tortuous, with marked pulsation. There were no hæmorrhages or effusions.

The diagnosis was acute retrobulbar neuritis; the prognosis fairly good, but guarded; and the treatment, mercury and iodide, a blister on the left temple, and rest in bed.

Progress.—Three days later (1st July) she could count fingers at a foot away, and the pain was less. By 5th July V. = $\frac{1}{80}$, but still she could not distinguish the light from the ophthalmoscope mirror when directed to the macula; there was still an absolute central scotoma. The right eye remained normal.

On 10th July V. = $\frac{2}{80}$, and the largest letters of near vision types. Pain almost gone. Ophthalmoscopically optic disc less prominent and outlines more distinct.

A week later (17th July), and four weeks from the onset, she greatly surprised me by seeing $\frac{1}{4}$ and one letter of $\frac{1}{4}$. The central scotoma, so far from being absolute, was fast disappearing. At 4 metres she could distinguish 10 mm. red and green squares, but called blue and yellow, green and white respectively. The peripheral field for white was full.

In another week (23rd July) V. = $\frac{1}{4}$ and partly $\frac{1}{4}$.

At this time she drew my attention to the fact that although her vision was now so good, there was a peculiar fogging or darkness about objects when seen with the left eye as compared with the right. This was obviously a disturbance of the light sense, and on reducing the illumination of the types, R.V. = $\frac{1}{8}$, L.V. = $\frac{1}{6}$. Ophthalmoscopically all appearance of activity had passed away and the disc was slightly pale. The mercury and iodide was stopped, and iron and quinine substituted.

Two months later (26th September) the vision was the same or slightly better, the refraction was estimated and found almost emmetropic, and a muscular error was corrected with prisms of low degree.

The pallor of the disc was noted to be almost exactly like that seen in toxic amblyopia.

I did not see her again until 20th April, 1901, when she came at my request.

The vision was $\frac{1}{4}$ Snellen with either eye.

The light sense was tested with Parinaud's types, and was found equal in the two eyes, in so far as could be gauged by this method. The visual field for white was full.

Central vision was apparently perfect. She could dis-

tinguish between a small ace of spades and an ace of clubs and between hearts and diamonds equally with either eye at 4 metres distance; and yet, in spite of it all, she declared there was some difference in the illumination of objects as seen with either eye separately. An object looked darker with the left eye than with the right. In one of Mr Nettleship's cases, a slight one, in which there seems to have been some retinitis, a picture was said to look as if in the shade with the affected eye, while appearing with the normal eye to be in sunshine. The description most accurately tallies with that offered by this patient.

As to the exact anatomical nature of this case I am not prepared to speak. Pathological examination must be an almost unique occurrence. The history of a definite exposure to cold after being heated tallies with the history given by Fuchs in his *Text-Book*, of retrobulbar neuritis occurring in men after hunting. The rapid course (although, indeed, the onset was delayed five days, on the assumption of chill as the cause) and the rapid recovery seem to point to a severe but temporary disturbance not dependent on any local or general disease. Such a disturbance I should imagine to be vasomotor in character.

TWO CASES OF TUBERCULAR PERITONITIS.

By WALTER L. WATT, M.D., MANITOBA.

L. F., aged 22, single, male, 5 feet 11 inches in height.

Family history.—Father died of paralysis. Mother is of very nervous disposition.

Personal history.—Has been troubled with diarrhœa intermittently for the past four years. In September, 1900, had an attack of pleurisy, with effusion, the latter being removed by operation. For some months suffered from chills, night-sweats, moderate fever, and persistent cough. The cough ceased in March, 1901, but the diarrhœa became more persistent, and the abdomen began to enlarge. This continued up to 6th June, when he came under my care.

He was then extremely emaciated; weight, 99 lb.; temperature, 100°; pulse, fast and dicrotic. The liver was considerably enlarged, being easily felt below the ribs, and in the epigastric region extending half way to the umbilicus. The area of

absolute cardiac dulness was considerably increased towards the left, and a well-marked aortic regurgitant murmur was present. The abdomen was greatly distended, and the abdominal veins were enlarged and prominent. Palpation caused great pain, especially in the epigastric and right inguinal regions. A large, ill-defined tumour mass could be felt extending from 2 inches above the umbilicus to the pubes, and springing from this were two irregular masses harder than the rest, one below the navel and the other in the left inguinal region. The spleen was enlarged.

Patient was put upon the following treatment:—

R.—Ung. iodoformi.

Sig.—1 dr. to be rubbed over abdomen morning and evening.

R.—Creosoti,	.	.	.	.	.	1 minim.
Iodoformi,	.	.	.	.	.	$\frac{1}{4}$ gr.—M.
Fiat. capsul., No. 1.						

Sig.—One three times daily after meals.

and for the cough—

R.—Zinci sulph.,	.	.	.	.	.	6 gr.
Menthol,	.	.	.	.	.	1 gr.
Aq. ad.,	.	.	.	.	.	3 oz.—M.

Sig.—To be used as a spray.

From now onward he seemed to make a steady improvement; the cough stopped; his appetite improved; the abdominal pain lessened; the diarrhoea gradually ceased. The swelling and tumefaction of the abdomen diminished till 21st June, when some near relatives came unexpectedly into the room without any warning. This seemed to excite him considerably, and in the next twenty-four hours he had two fainting spells, with difficulty of articulation. In case of any depressing effect, all treatment was stopped. He improved a little, except as regards his speech, till the 26th, when he had an attack of convulsions, preceded for a couple of hours by frontal headache and cyanosis. The aphasia now became more marked, and on the 29th he had another severe convulsion, followed by coma. After a fairly quiet thirty-six hours, during which the headache disappeared, not to return, his strength began to fail very rapidly, and on 3rd July convulsions set in, which continued till 6th July, when he died. After the first of these he was found to have paralysis of the face, arm, and leg, with complete aphasia. The convulsions were uninfluenced by treatment,

and could only be controlled by chloroform. The patient was comatose, with one or two intervals of semi-consciousness, especially for a short time before he died. Urine and fæces were passed involuntarily. On 4th July there was a single attack of vomiting, the material ejected consisting of a greenish fluid. All fluid was refused by the mouth, rectal injections were not retained, and he was only kept alive for a time by brandy.

The pulse was interesting. At first it was fast and dicrotic; it gradually became slower and increased in strength, till the onset of the convulsions, when it became very variable—at times strong, at times what might be called sinusoidal, and, again, irregularly intermittent. During the last twenty-four hours it was soft, and about 90 to the minute, every third beat regularly intermitting.

The temperature ranged generally between 99° and 101°; the only marked rise was on the 26th, when it reached 103°.

An examination of the abdomen, a few days before he died, showed an almost normal condition. The tumour masses had entirely disappeared; the liver had diminished considerably; the spleen could not be palpated; and tenderness was nowhere present.

As regards the paralysis, that of the leg disappeared within thirty-six hours after the onset, and during the last day patient was observed to move the arm several times a few inches. The tendon reflexes were increased.

In the diagnosis one would naturally think first of disseminated tuberculosis, but personally I was inclined to think that the brain symptoms were due to embolism from the valvular heart lesion, since his mental condition was perfect up to the sudden visit of his relatives, which, undoubtedly, caused considerable shock and excitement, as I saw him shortly after, and he then looked very flushed. There was no disturbance of vision, but, of course, during the convulsions the pupils were dilated. The headache only lasted two or three days. There was only one attack of vomiting. The hemiplegia came on suddenly, and afterwards improved.

W. C., aged 20, male, single, 5 feet 8 inches in height.

This patient had been feeling unwell for some time with slight enlargement of the abdomen, when, on 12th December, 1900, he became alarmingly ill. His temperature rose to 104°. There was decided enlargement of the abdomen, with obstinate constipation. He was treated by one of the local physicians,

and was also seen in consultation by several doctors, who all pronounced it tubercular peritonitis. His condition not improving, it was decided to operate on him, and this was done on 28th December. But it was found that the intestines were firmly adherent to the abdomen, and, in fact, the abdominal incision had been carried almost through the bowel before the condition was diagnosed. The wound was immediately sewn up, without anything being done, and his chances of recovery were considered very small. However, he lingered on, and had begun to improve somewhat, when, on 22nd April, I saw him for the first time.

At that time he was emaciated. Physical examination revealed nothing abnormal apart from the abdominal trouble. The abdomen was distended, with prominent veins. Palpation caused great pain. Tumour masses could be felt filling up the whole lower half of the abdomen, with a separate one in the right hypochondriac region. There was a slight temperature, with a pulse of about 80 to the minute. There was no ascites.

He was put on ung. iodoformi and the capsule of creosoti and iodoform as above, and within a week began to show signs of improvement, and in three weeks had gained $4\frac{1}{2}$ lb. in weight. His condition rapidly became better, so that on 25th June, when I saw him before leaving here for the summer, he felt as well as ever. The tumefaction was gone, and the pain had disappeared. In fact, nothing abnormal could be felt. I heard from him a month later, and he said he felt perfectly well.

Both of these cases are interesting because the peritonitis in each was of the plastic adhesive form, in which the value of operative interference is most doubtful. Burney Yeo, in writing about the treatment, also considers it of greatest value in the ordinary form, with effusion. In both of the above cases there was, however, no doubt of the diagnosis, and in both the abdominal trouble was completely cured. I believe that if L. F. had not had organic heart disease he would have made as uninterrupted a recovery as W. C. The results were certainly encouraging, and the treatment is well worthy of trial. In each case the prognosis given by the leading physicians was fatal.

MEMBRANOUS SORE THROAT AND PERFORATION OF THE FAUCIAL PILLARS RESULTING FROM INFECTION BY THE PNEUMOCOCCUS.

By T. K. MONRO, M.A., M.D.,

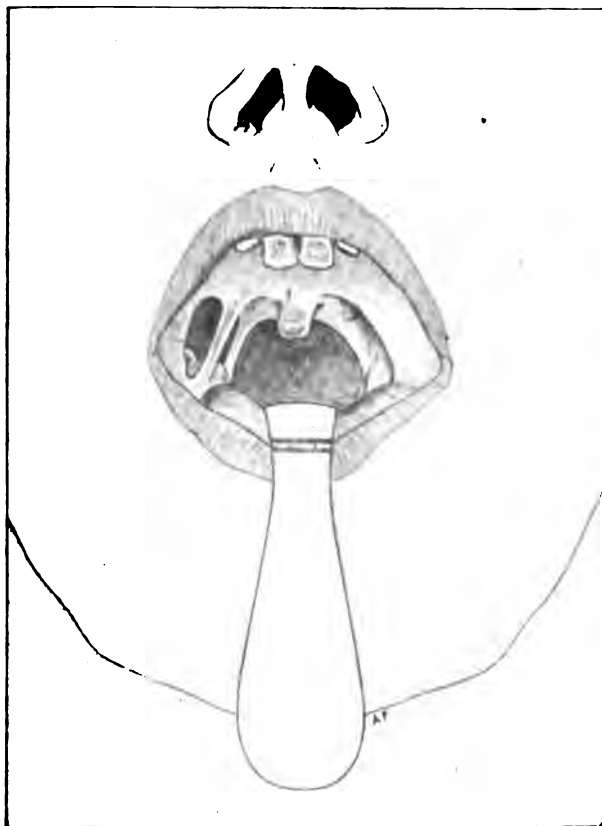
Physician to Glasgow Royal Infirmary, and Professor of Medicine in St. Mungo's College.

WITH the possible exception of the bacillus of tubercle, Fränkel's pneumococcus appears to be at the same time the most ubiquitous and the most virulent of the organisms we meet with on the medical side of a general hospital. It is associated not only with pneumonia, but also with abscesses, suppurative arthritis, meningitis, otitis media, infective endocarditis, pericarditis, peritonitis, and pleurisy, both simple and suppurative. On the other hand, it is frequently present in the mouth in healthy persons. In the case now to be described, this organism was the principal, if not the sole cause of a severe membranous inflammation of the fauces, which resulted in perforation of the faucial pillars. It is true that a staphylococcus was also present at times, but this seems to have played a subordinate part, if any, in producing the lesions. The case is further of interest, inasmuch as the bacillus of diphtheria could never, in spite of repeated investigation, be proved to be present, and yet some of the well known sequels of diphtheria ultimately supervened. The presumption is that a few diphtheria bacilli effected a lodgment in the throat, in the same way as they may attack the sore throat of scarlet fever. Some time ago I had under my care a boy in whom a membranous inflammation of the fauces was due to streptococci, but in this instance the diphtheria bacillus was detected after about two weeks.

The pneumococcus membranous throat is rare. Escat, in his treatise¹ published in the present year, remarks that this has been observed by Netter, Jaccoud, and Menetrier, but dismisses the subject in a few lines. The invasion is generally acute, and speedily followed by painful glandular enlargement. Unless it is complicated by croup or suppuration of the glands, it usually runs a favourable course, like a mild attack of ordinary diphtheria.

¹ *Traité medico-chirurgical des maladies du pharynx*, Paris, 1901, p. 100.

Mary M., aged 21, kitchenmaid, began to suffer on 31st March from pain in the throat and vomiting. When she was first seen on the following day, the inner aspect of the right tonsil was covered almost uniformly by a thin yellowish membrane, which in the course of the next few days spread and involved



Perforation of right faucial pillars resulting from pneumococcus infection.
(Drawing by Dr. Alex. Fraser.)

the anterior surface of the right anterior pillar of the fauces, and also the inner aspect of the left tonsil. There was for a time intense congestion around the lesion on the right side, with oedema which involved the uvula. By 5th April the membrane had extended from the right fauces along the

posterior border of the soft palate, including the whole posterior surface of the uvula, to the left fauces. When a piece of membrane was removed by forceps at this stage, the surface which was left appeared nearly normal, but bled a little. On 6th April a faint trace of albumen was found in the urine. On the 8th, the left side of the throat and the back of the uvula were nearly clean, but the condition of the right side was worse than before. The pain was greater. The membrane was dirtier and more suggestive of diphtheria than formerly. It was more firmly attached, and attempts to raise it caused pain. There was great enlargement and tenderness of the glands in the right side of the neck. Albuminuria was more marked. On the 10th there was observed, farther to the right than the earlier site of lesion, an area of intense congestion, which suggested abscess formation. The appearances gradually improved under the local application of hydrogen peroxide. On the 17th it was found that at the part where formerly an abscess appeared to threaten, there was now a large perforation through the right anterior pillar of the fauces. On the 20th, patient was admitted to the ward on account of the discovery in the discharge from the throat of an organism closely resembling the diphtheria bacillus. About this time it was ascertained that there was a perforation through the right posterior pillar of the fauces. About 20th April, patient began to suffer from regurgitation of fluids through the nose when she attempted to drink, and it was subsequently found that the right half of the palate was very deficient in power. About 10th May, patient began to notice that her sight became dim on reading. Ophthalmoscopic examination revealed no disease in the fundi. As a result of examinations carried out by Dr. Monro and Dr. H. Wright Thomson, it was ascertained that the right eye had not previously been so good as the left, and that this defect was associated with a high degree of astigmatism, whereas the left eye was almost emmetropic. There appeared, therefore, to be paresis of accommodation in the left eye, giving rise to fatigue with undue readiness, but not preventing patient during a short examination from reading very small type promptly and correctly. The right eye was probably amblyopic from disuse.

About the second week of May, patient began to experience a slight sense of numbness in the tips of the four inner digits of each hand. The left knee-jerk was scarcely so well marked as the right, which was normal. The urine was free from albumen after 10th May. The tendency to regurgitation

through the nose continued for at least a fortnight longer. There was no pyrexia while she was an in-door patient.

It is, perhaps, worthy of note that there was no evidence of syphilis, either hereditary or acquired.

The following is the description of the perforations as noted on 29th April:—The aperture in the anterior pillar has its long diameter nearly vertical, but with an inclination downwards and outwards. The long diameter measures five-eighths of an inch; the transverse about three-sixteenths of an inch. The strip of tissue remaining at the inner border of the anterior pillar is of nearly the same breadth—viz., three-sixteenths of an inch. The aperture in the posterior pillar is very much wider than that in the anterior; its vertical measurement is about five-eighths of an inch.

The following is the joint bacteriological report of Dr. David M'Crorie, Bacteriologist to the Infirmary, and Dr. J. Archd. Campbell, of the same department:—

"On 1st April, 1901, a swabbing from the throat of Mary M. was taken by Dr. Monro, and submitted to us for bacteriological examination. By direct examination and by culture the germ which was present was proved to be Fränkel's pneumococcus in pure culture. Swabbings were also taken and examined on 5th, 9th, 11th, 19th, 24th, and 29th April. On all these occasions the pneumococcus was abundant, but the cultures on 5th April revealed, in addition, the presence of staphylococcus pyogenes aureus, and a bacillus which morphologically resembled the diphtheria bacillus, but differed from Klebs-Löffler's germ in its cultural characters, and also in being decolorised by Gram's method of staining. This was the only occasion on which this germ was present.

"The staphylococcus, however, was present on 9th and 19th April, but on 11th, 24th, and 29th, the pneumococcus alone was found.

"The lesion was thus evidently caused by the pneumococcus, and judging from the clinical history and the persistence of the germ, it would seem to have attained a great degree of virulence."

Obituary.

ADAM LAWSON KELLY, M.D., F.F.P.S.G.

It is with feelings of the deepest regret that we again record the startlingly sudden death of one of Glasgow's oldest and most highly esteemed practitioners, Dr. Adam Lawson Kelly, 26 Blythswood Square, Glasgow, which took place in Renfield Street on Sunday afternoon, 18th August last—a regret which is shared by a large and influential body of our fellow-citizens, amongst whom he had gone out and in as a much beloved family physician for more than forty years.

He was born in 1835 at Riccarton, Kilmarnock, where his father was a schoolmaster. Like most youths destined for the medical profession in those days, he got his initiation into the mystery of drugs as the apprentice lad or shop boy in Dr. Thomson's surgery, King Street, Kilmarnock. Thereafter, he entered the University of Glasgow, through the classes of which he passed with more than ordinary distinction; graduated M.D. in 1859, and at once settled in practice on the South Side, where he was the leading physician for many years, continuing his hold on many families there even after his removal to the West End. Shortly after entering upon practice he became first a Licentiate, and then a Fellow of the Faculty of Physicians and Surgeons, Glasgow, in the affairs of which he took the greatest interest, his valuable and unostentatious services in office being much appreciated amongst his fellows, with all of whom he was held in the highest respect for his sterling worth as a man and a physician. He was not only one of the Examiners for the Faculty, but, at the time he had the first attack of his fatal illness, he was Visitor and prospective President.

From its foundation, he was one of the managers of the Victoria Infirmary. We are not sure, indeed, but that the very first suggestion of the wisdom of having such an institution on the South Side came from him. He was much gratified by the success which has followed it from its origination, and laboured, in season and out of season, in its interest, which he felt as one personal to himself.

For many years he was one of the Governors of the Andersonian Medical School, and, as a past President of the Southern Medical Society, he always took the deepest interest in its affairs, though of late years he was seldom seen at its meetings.

He was, perhaps, too much engrossed in practice to write much, and, except some papers on obstetrical subjects, he has left no permanent record in literature.

His success as a practitioner was both immediate and great, as he possessed in an unusual degree the faculty of inspiring confidence in his patients; and this was, no doubt, due to the union of a sound medical education with an attractive personality, which manifested in no common degree both physical and mental vigour. He was firm, yet gentle, in the management of difficult cases. Rapid in decision, and confident in treatment, he secured from his patients unhesitating trust in his skill.

In private life he was modest and retiring, and, over and above the deep interest he had in the progress of modern surgery and medicine, he manifested a taste for general literature and for art, being for many years a member of the Glasgow Institute of the Fine Arts, in whose annual exhibitions and general prosperity he took a sincere interest. He was, too, a kind friend and prudent counsellor, and many went to him for advice in their domestic and business troubles; and none was more able or worthy to give it, for he had passed through some heavy trials in his own experience, notably that associated with the failure of the City of Glasgow Bank, of which he was a shareholder. This great calamity, however, neither broke his spirit nor crippled his usefulness. With a quiet bravery he still pursued the even tenor of his way, wearing a cheerful countenance, and taking undiminished interest and pleasure in his work as a physician, which he loved for its own sake, and which was at once his highest solace and sincerest reward, and the secret, therefore, of his great popularity and success. A striking testimony to these fine qualities of head and heart of which we speak, was witnessed on the day of his funeral, at which an unusual number of people, including many ladies, were spontaneously present, and evidently visibly affected, to pay their last tribute to his memory. More than one of these persons, both when standing at Blythswood Square and around the open grave at the Necropolis, were heard to say that they had not only lost a physician but a kind friend.

The strain of all these forty years of unremitting labour in an abnormally large practice was bound to tell sooner or later on his health; for he took but a brief annual holiday, which he usually spent by loch and stream as an enthusiastic member of the gentle craft. About three years ago he suffered from attacks of what was regarded as *angina pectoris*, and for more than

a year abstained entirely from practice. But for that fact few would have known that he was ill, as he spoke little about himself, and after the first severe attacks of pain his wonted cheerfulness returned, and those who were most intimate with him considered him to have quite recovered. Indeed, until he was suddenly struck down, his walk and carriage, even on the day of his death, gave the impression of vigorous health.

He is survived by a widow; three daughters, one of whom is married to the Rev. Mr. Rankin, U.F. minister of Tighnabruaich; and two sons, the elder of whom—Dr. A. Brown Kelly—is a member of our own profession, and has already gained a high reputation in his speciality of throat and nose. We should add that the deceased's younger and only surviving brother, Dr. James K. Kelly, is the esteemed teacher of gynaecology in the Glasgow Royal Infirmary.

CURRENT TOPICS.

ROYAL INFIRMARY: APPOINTMENT.—Mr. John A. C. Macewen, B.Sc., M.B., C.M., has been appointed Extra Dispensary Surgeon.

ROYAL INFIRMARY.—The following house appointments have been made for the six months from 15th October, 1901, to 15th April, 1902:—

House Physicians.—John M'Intyre, L.R.C.P., &c., assistant to Dr. M'Vail; P. M'Kellar Dewar, L.R.C.P., &c., assistant to Dr. Middleton; James Scott, M.B., Ch.B., assistant to Dr. Lindsay Steven; R. Ramsay, M.B., Ch.B., assistant to Dr. Monro; A. B. Laidlaw, L.R.C.P., &c., assistant to Dr. Allan.

House Surgeons.—J. T. Griffiths, L.R.C.P., &c., assistant to Mr. Clark; Donald Duff, L.R.C.P., &c., assistant to Dr. Barlow; A. Harrington, M.B., Ch.B., assistant to Dr. Adams; Charles C. Cuthbert, M.B., Ch.B., assistant to Dr. Newman; Lachlan Gollen, M.R.C.S.E., assistant to Dr. Knox; John Stewart, L.R.C.P., &c., assistant to Dr. M'Lennan; J. F. Falconer, M.B., Ch.B., assistant to Mr. Pringle.

Gynaecological Department.—Wm. Robertson, M.B., Ch.B., out-door assistant to Dr. Kelly.

Ophthalmic Department.—W. E. Tellet, M.B., Ch.B., assistant to Dr. Ramsay.

GLASGOW UNIVERSITY CLUB, LONDON.—It gives us great pleasure to inform our readers that Dr. C. O. Hawthorne has been appointed one of the honorary secretaries of this Club. We congratulate the Club on this appointment, for we know well Dr. Hawthorne's admirable qualities as an organiser and enthusiastic worker in all that concerns the advancement and social wellbeing of Glasgow graduates.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1900-1901.

MEETING XV.—19TH APRIL, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—PATIENT ON WHOM SUPRA-SCAPULAR AMPUTATION WAS PERFORMED THREE YEARS AGO FOR SARCOMA, AND WHO NOW HAS RECURRENCE ELSEWHERE.

BY MR. H. E. CLARK.

Mr. Clark showed a patient, a man, aged 52, on whom he had performed supra-scapular amputation three years ago for sarcoma of the pectoral and deltoid muscles. The patient first came under his care about fourteen years ago with a small, well-defined and encapsuled sarcoma of the deltoid muscle. This was enucleated, and on microscopic examination was found to be mainly of the spindle-celled variety, but with some admixture of round cells in the deeper part of the tumour. Recurrences took place every few years, until at length it was decided to remove the whole upper limb, and to freely take away the muscles and skin covering the chest wall. This was done (as stated above) three years ago, and constituted the fifth operation of removal. In consequence of the wide removal, it was difficult to get skin covering, and the whole of the integument of the back of the arm (as far as the elbow) was brought forward to cover the front of the chest wall. Much of this long flap, however, died, and the process

of healing in front was largely by granulation, aided by free grafting. A good result was obtained, and for two and a half years he was able to get a living as a light porter. Lately he returned complaining of pain and tenderness above the clavicle, and, on examination, there were found to be fibrous thickenings of the cut ends of the brachial cords. It was seen, also, that there was an extensive recurrence of sarcomatous growth in the substance of the lower part of the erector spinæ muscle of the right side (the same side as the amputation). Careful examination as to the condition of the liver, lungs, and kidneys served to show that there was no evidence of secondary deposit in them, and the bones seemed also free from suspicion.

Microscopic sections of the tumour removed at the fourth operation were submitted by Dr. Hugh M'Laren, and were chiefly remarkable for the very large admixture of myxomatous tissue with the spindle cells.

Mr. Clark asked the opinion of the members as to (1) whether the tumour mass in the erector spinæ was to be regarded as a secondary infection through the blood stream, and (2) as to the policy of attempting a removal of the mass.

II.—PENETRATING BULLET-WOUND OF THE BRAIN: REMOVAL AND RECOVERY.

BY DR. JAMES LAURIE.

R. M'C., aged 15 years, was admitted to the Greenock Infirmary on 24th September, 1900, suffering from the effects of a bullet-wound of the brain, having been accidentally shot by a companion who was playing with a toy pistol.

My colleague, the late Dr. Black, saw him at the time of the accident, and noted "convulsive twitching of right side of the face."

The following note was taken of his condition by the house surgeon on his admission:—

"The patient was admitted about 4.45 P.M., in a condition of almost complete unconsciousness. He responded to vigorous stimulation, but was unable to answer questions or comply with requests made to him. His colour was good. His respirations were regular, but sighing. His pulse full and regular. Pupils, equal and normal, reacted to light. Right conjunctiva was insensitive, while the left was sensitive to touch. There was paralysis of the right side, especially marked in the face and arm. The paralysis of the leg was less marked, and the plantar reflex was present, though diminished. He vomited copiously shortly after admission.

Examination showed a small wound of the left frontal bone, situated an inch and three-eighths above the line drawn through the supra-orbital margin, and seven-eighths of an inch to the left of the middle line of the head. The wound was circular, and about one-eighth of an inch in diameter, surrounded by slight bruising. On probing the wound, the bullet was found to have penetrated the skull and entered the brain. The probe passed backwards, downwards, and outwards."

I saw him at 7:30 P.M. The paralysis of the leg was now complete, with absence of the plantar reflex. There was also complete right-sided paralysis, the patient quite unconscious. Pulse, 76, irregular and intermittent.

A sterilised probe, by its own weight, passed its whole length into the track of the bullet. An *x-ray* photograph was taken in two positions—antero-posteriorly and laterally—and the position of the bullet localised.

The scalp having been prepared, he was operated upon at 10 P.M. Chloroform was the anæsthetic given. A large horse-shoe incision was made in upper and posterior parietal regions, and the flaps reflected downwards. A trephine opening was made in the parietal bone behind the Rolandic fissure, and coinciding with the probable direction of the bullet.

Neither hæmatoma nor bullet being found after opening the dura, another trephine opening was made farther back, and the two openings connected by sawing the bridge of bone, using the "Gigli" saw.

Inserting my finger in the latter opening, and sweeping the occipital bone with it, I got the bullet between the membranes and the brain. The dura was replaced, and the part kept moist with warm saline solution. I next followed the track that the bullet had made, with a long probe, bringing it out through the occipital bone by a small trephine opening, having first attached a thread to the eye of the probe and connected it with a No. 8 Jacques sterilised catheter, in which openings were cut similar to a drainage-tube. This passed from the frontal opening through the whole length of the brain, and emerged at the small opening just described. The discs of bone were replaced and a drain put in the flap, the wound being dressed with sterile gauze and sterile wood-wool pad.

He passed a good night, sleeping quietly; no sickness. At 6 A.M.—temperature, 99°; respiration, 24

During the following day (the 25th) he had hiccough and could not swallow, and recourse was had to rectal feeding

(only necessary for this and the succeeding day). On the 27th he was able to drink some milk, subsequently being fed upon milk, beef-tea, chicken soup, and Brand's essence. From 27th September till 1st October he continued gradually improving and gaining strength. On 2nd October he could protrude his tongue when asked, and the next day asked for a biscuit. On 5th and 6th October his pulse was 47, very slow and weak; temperature, normal. Hypodermics of strychnine were given, and half an ounce of whisky every three hours. He continued taking nourishment well. The whisky was stopped on the 6th, and on the 8th he was stronger and brighter, and asked for a book with pictures. *Black and White* was given him, and he was able to turn the pages himself with his left hand. From this date onwards his intelligence gradually improved and returned.

On 28th September (fourth day since accident) there was movement of the right leg when touched, and on 8th October he could move his arms. Improvement was now continuous and progressive, and on 4th November he was able to write his name with his right hand, and on 16th November he carried a pail of water the whole length of the ward. It is to be noted that the power of the limbs recovered quicker than speech.

On 26th September (second day after operation) 6 inches of the drainage-tube were cut off, and the remaining 3 inches removed on the 29th, the drain beneath the flaps having been removed the previous day.

The replaced bone discs held and the wound healed by primary union, with the exception of a small point at the apex of the incision, which healed by granulation. The highest temperature recorded was 100° F. at 10 P.M. the night following the operation. For the greater part of the time it was sub-normal.

The patient was kept in hospital until 10th January, 1901.

REFERENCE.

Keen and White, *Surgery*, 1896—Fluhrer's case.

III.—MODIFIED KRASKE OPERATION FOR MALIGNANT DISEASE OF THE RECTUM, WITHOUT A PRELIMINARY COLOTOMY.

BY DR. JAMES LAURIE.

C. D., aged 31, engine-fitter, was admitted to the Greenock Infirmary on 26th November, 1900, complaining of difficulty of defæcation.

Six months ago he noticed that he was having an occasional attack of pain of a sharp, shooting nature in the neighbourhood of the anus, and also referred to the rectum. These pains would last for a few minutes and then pass off, and he would feel relieved. The pains invariably came on when he was standing, and left him when he lay or sat down. At this time he became aware that he had difficulty in getting his bowels moved when he went to stool, and, occasionally at those times, but not invariably, he experienced an aggravation of the pains when the fæces were passing the anus, and always had immediate relief when the motion was passed.

Previous to six months ago he was inclined to be constipated, but did not think unusually so. The motions, from being of a natural character, during the last six months have gradually assumed a ribbon-like appearance. He has also been greatly troubled with flatulence, which pained him somewhat across the abdomen, but on breaking wind was relieved. Sometimes, on passing wind, a slight watery discharge would come away.

Patient states he has always been a healthy man, except for an illness he had in Australia six years ago, which his medical attendant told him was enlargement of the liver. Nine years ago he had gonorrhœa with paraphimosis, for which he underwent treatment and was cured in about four weeks. He cannot recollect that his hair fell out at that time, or that he suffered from sore throat. For the last three or four years he has been very intemperate.

Examination.—Patient is well built and well nourished; his back, especially between his shoulders, is covered with acne spots and numerous small, white cicatrices, probably the remains of previous acne rash. Nothing abnormal can be made out in the internal organs by physical examination.

Rectal examination.—On examination *per rectum*, a hard, tuberculated mass could be felt, attached to and encircling the inner wall of the rectum about an inch and a half from the anus. The finger can be passed beyond the growth for about an inch. There was no blood on the examining finger when withdrawn, and the patient states he is not aware that he ever passed blood *per rectum* since he became cognisant of his present condition.

On 19th December chloroform was administered, and the condition of the growth examined more particularly. No affected glands could be felt, and the above report corroborated. A wedge of the growth was removed and submitted to Dr. Leslie Buchanan. Subjoined is his report:—

“Growth is a cylinder-celled epithelioma of probably

moderately slow growth, owing to the development of much fibrous tissue between the epithelial masses."

Operation was performed on 30th December as follows:—

1. An incision to the left of middle line from the tip of the coccyx.
2. Freeing of the integuments, &c., from the sacrum.
3. Removal of coccyx and lower two pieces of the sacrum with the chisel and a pair of scissors curved on the flat.
4. Hæmorrhage was very free and gave some trouble in arresting it. This is undoubtedly a very important part of the operation.
5. Freeing of bowel by fingers, preservation of levator ani muscle and section of nearly 2 inches of the bowel with end to end suture.
6. Wound packed with sterile gauze, external wound closed at upper and lower end only. The wound was allowed to heal by granulation, being dressed daily with sterile gauze packing.
7. No preliminary colostomy was performed.

Analysis of treatment.—Patient was very much collapsed after the operation, and until 4th January complained of abdominal pain, with vomiting, pain, and occasional hiccough. Morphia hypodermically required to be given.

The highest temperature at this period was 101·4°, and the average 100° in the 24 hours. An attack of bronchitis until 14th January was the only complication.

Gradually those symptoms subsided. The bowels moved on 3rd January through the wound—the stitches having given way. The wound was douched twice daily with hot saline solution, remained free from suppuration, and packed with sterile gauze. He was taught how to wash the parts with an enema in the morning, and so ensure movement of the bowels, cleanliness, and cover all with a pad.

Dismissed well on 3rd April, 1901.

REFERENCE.

Annals of Surgery, vol. xxxii. Dr. Jno. B. Deaver reports four cases—two had sphincteric action, the others had not.

IV.—ACUTE APPENDICITIS: REMOVAL OF APPENDIX FOUR HOURS AFTER ONSET OF SYMPTOMS: RECOVERY.

BY DR. JAMES LAURIE.

A. M'P., aged 24, was suddenly seized, while walking home, with severe abdominal pain, about 7 P.M. on the evening of 20th January, and was admitted the same evening to the Greenock Infirmary. He managed to reach the close of the

land in which he lives, when he collapsed and had to be carried upstairs.

Dr. Allen, assistant to the late Dr. Black, saw him soon afterwards, and recognised the seriousness of his condition. I was asked by Dr. Allen to see him, and found that marked symptoms of peritonitis were present, his pulse small and thready, face pinched and pale, severe abdominal pain limited to the right side of the abdomen, which was rigid and retracted.

A diagnosis of acute appendicitis, probably perforative, was made, and immediate operation advised. Dr. Black saw him later, and concurred in the opinion given.

He was removed to the infirmary, and I operated upon him at 11 P.M.

The usual incision was made, and the appendix, which was a large one, was found easily and removed close to the cæcum. On opening the peritoneum there was a moderate gush of serous fluid and just a suspicion of pus.

There was no attempt at adhesions forming. The cavity was washed out with saline solution, and the wound stitched with silk worm gut.

A drain was inserted, and removed in a few days. The wound healed by primary union, the patient making a good recovery. The lumen of the appendix was filled with faecal concretions, and the mucosa was acutely inflamed. This was verified by the pathologist's report.

The advisability of operating so early (four hours) after the onset of symptoms may by some be questioned, but I think that the extreme collapse and severity of the symptoms strongly suggested a perforative lesion, either of the stomach or appendix, and to delay would have been unjustifiable and dangerous to the patient—in fact, it was the absence of flatus when the peritoneum was opened that cleared up the point that it was not a perforation of the stomach I had to deal with, as the external appearance of the appendix did not at first suggest it as the cause of such severe symptoms.

The patient was dismissed from hospital on 15th February, well.

V.—CHANGES IN THE PERIPHERAL NERVES IN A CASE OF DIABETES MELLITUS.

By DR. JOHN WAINMAN FINDLAY.

Dr. Findlay's paper appears as an original article at p. 258.

MEETING XVI.—3RD MAY, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—CASE OF GOUT.

By DR. G. S. MIDDLETON.

A. B., aged 64, clerk, has, on several occasions since the end of 1899, been under treatment in the infirmary with well-marked gout. The earliest attack occurred fully twenty-five years ago, and was absolutely sudden in its onset. The pain affected the balls of both big toes, and was so severe that he had to be carried home from his office. In a day or two the toes became swollen, red, and very hot and exceedingly tender. He was confined to bed for six or seven weeks.

Prior to this attack he had never tasted whisky or wine of any kind, but for some months he had been irregular in his habits, seldom getting a good dinner, but contenting himself with some bread and cheese and a glass of beer. He had never taken beer to excess. His father is said to have died of gout at the age of 65.

Five years later a second attack occurred, affecting the same joints. Two or three years after that attack other joints became affected, and for the past ten years he had at least one attack each year. But in the past few years he has taken beer occasionally to excess, and has taken whisky also to relieve the pain.

The patient's hands exhibit typically the deformities of chronic gout, both in the phalangeal and metacarpo-phalangeal joints, and some of them present marked chalk stones. Some chalk stones are also seen in the pinnæ of the ears. In the feet at various times typical gouty deposits have been seen, especially in the balls of the great toes. In the heels, also, acute inflammatory attacks have occurred with suppuration. On the cheek under the right eye there has for ten years been a slight ulcer, generally covered with a thick scab. In all the discharges from the ulcers, and from the ulcerating surfaces round the chalk stones, urate of soda in fine acicular crystals has been very abundant.

This is a case of chronic gout, and of a nature very uncommon in this neighbourhood. It is the third case of

the kind that Dr. Middleton has seen in hospital, the other two being cases imported from the south, while this man is a native of Ayrshire. In regard to causation, it is probable that heredity plays a great part, and there does not appear to be any reason to doubt his statement that intemperance in the use of beer had nothing to do with the primary attack. It is presumably what is known as "poor man's gout."

II.—NOTES ON IRIDEREMIA, WITH REMARKS ON THE HISTOLOGICAL EXAMINATION OF CASES.

By DR. LESLIE BUCHANAN.

Dr. Buchanan's paper appears as an original article at p. 252.

III.—RUPTURED GASTRIC ULCER.

By DR. DAVID NEWMAN AND DR. GEORGE S. MIDDLETON.

Dr. Newman and Dr. Middleton gave an account of a number of cases of gastric ulcer. They included two cases which terminated fatally after operation, three cases in which a cure was effected by operation, and two cases where spontaneous cure occurred without operation.

An account of these cases will form the subject of a paper in a future number of the *Glasgow Medical Journal*.

IV.—NOTES OF A CASE OF UNILATERAL ACUTE RETROBULBAR NEURITIS.

By DR. ERNEST THOMSON.

Dr. Thomson's paper appears as an original article at p. 267.

MEETING XVII.—10TH MAY, 1901.

The President, MR. H. E. CLARK, in the Chair.

I.—CASE IN WHICH A LARGE EPITHELIOMA OF THE LARYNX WAS REMOVED BY THYROTOMY.

By DR. DAVID NEWMAN AND DR. FULLARTON.

The patient, Miss M'K., consulted Dr. Fullarton on 30th March, 1900, on account of hoarseness. She had been in

Australia for many years, and when there was troubled with her throat, but had never been so hoarse as at present. The doctors in Australia considered the disease to be tubercular in origin. She recovered from these attacks, and for seven years the throat remained well. The present illness followed an attack of influenza three months ago. On examination with the laryngoscope, impaired movement of the right vocal cord was observed, with some redness and thickening of the free border at a point rather anterior to the junction of the anterior and middle thirds. When Dr. Fullarton examined the case he was suspicious of malignant disease, but the appearances were not sufficiently characteristic to enable him to pronounce an opinion.

25th June, 1900.—The redness now shows a distinct out-growth at the free margin of the cord, and appears to have involved the lower surface to a considerable extent. The aphonia is more marked. During the autumn little change took place further than a slight increase in the swelling.

4th January, 1901.—The whole right vocal cord has become infiltrated and greatly swollen, and now is beginning to interfere with respiration, and a slightly enlarged lymphatic gland is observed in the front of the larynx.

Dr. Newman was asked to see the case, and came to the opinion that it was one of epithelioma, and decided that an immediate operation was necessary.

The patient was admitted to the Glasgow Royal Infirmary, and thyrotomy was performed. On the larynx being opened, the tumour was found to be much more extensive than appeared on laryngoscopic examination, extending below the vocal cords on both sides. The whole of the soft parts were completely removed from the base of the epiglottis to the lower margin of the cricoid cartilage.

The patient made a good recovery, and there has been no recurrence (27th September, 1901).

II.—CYSTIC DISEASE OF THYROID BODY, WHERE SPONTANEOUS CURE FOLLOWED THE FORMATION OF AN ABSCESS.

BY DR. DAVID NEWMAN.

The patient, Mrs. P., was first seen in 1889 at the Royal Infirmary Out-door Department for disease of the throat. At that time there was simple enlargement of the thyroid body, the gland being about the size of a walnut, hard and firmly fixed. There was no evidence of cystic formation, and

otherwise the patient enjoyed good health. Small blisters were applied, and iodide of potassium administered internally. In three months the swelling disappeared, and the patient was not again seen by Dr. Newman until January, 1900, when the patient consulted him privately. At this time there was a very large swelling of the right lobe of the thyroid body. The swelling was firmly fixed, and extended from the lower jaw to the clavicle. The patient suffered from considerable dyspnoea, severe irritating cough, and dyspepsia. On examination with the laryngoscope, there was seen to be paralysis of the right vocal cord. The patient was very anæmic and extremely weak, so that the question of excision of the diseased organ could not be entertained. An exploratory puncture was made with a small aspirator needle, when the presence of innumerable small cysts was discovered. These were tapped repeatedly, as many as a dozen punctures being made on each occasion, and from each cyst from 20 drops to 1 drachm of clear fluid was drained off. By this means the swelling was considerably reduced, and by the end of February the patient experienced considerable relief.

In May a very sudden increase in size occurred, due to a spontaneous hæmorrhage. This caused the patient great suffering, and she was admitted into the Central Nursing Home. After being there for three weeks she was sent to the country, and while there an abscess formed, associated with high fever and serious constitutional disturbance. The patient was readmitted to the home, the abscess opened by free incision and drained, a drainage-tube being kept in until the end of September.

By the beginning of January, 1901, the whole swelling had completely disappeared, and the patient now (27th September, 1901) enjoys excellent health.

III.—MULTIPLE EXOSTOSES IN BOTH EXTERNAL AUDITORY CANALS.

BY DR. J. GALBRAITH CONNAL.

This condition is rarely met with. The man is 55 years of age, and a butcher to trade. I saw him for the first time about eighteen months ago, when he complained of dulness of hearing and tinnitus of a "rumbling" character. These symptoms, he thought, were due to a cold in the head.

Examination showed both external auditory canals filled with cerumen, and when this was removed the exostoses were

discovered. In the right ear there were three sessile masses—two anteriorly and one posteriorly—leaving between them a little gap through which the tympanic membrane, with a small part of the handle of the malleus, could be seen.

In the left ear there were two sessile masses, opposed to one another anteriorly and posteriorly, almost occluding the canal.

Regarding the patient's personal history, he says he has always been a strong, healthy man. Five years ago he had an attack of "sciatica," and since then an attack of "rheumatism" in his shoulder and fore-arm. He mentions that in younger life he was a great swimmer.

There is great difference of opinion regarding the etiology of this condition. Gout, rheumatism, and syphilis have all been mentioned as predisposing causes. Inordinate sea-bathing has also been assigned as a cause, and the prevalence of aural exostosis among the South Sea Islanders gives some support to this view.

Virchow is of opinion that exostoses are due to an irritative disturbance of normal bone development.

These bony processes are generally met with on the anterior or posterior walls of the canal—anteriorly, where the tympanic plate meets the horizontal plate of the squama; posteriorly, at the junction of the tympanic plate and the mastoid process. It is interesting to note that in the nose, where exostoses (septal spurs) are a very common condition, the same rule holds good that they generally form where bone meets bone or bone meets cartilage.

With respect to treatment, it is now generally agreed that aural exostoses are best left alone, except where the patient has suppurative middle ear mischief (which this patient has not), or marked dulness of hearing with tinnitus. Here there is complaint of dulness of hearing and tinnitus, which is due to cerumen blocking up the chink between the bony processes. After removal of the cerumen he hears very well, so that I have advised him to let matters remain as they are in the meantime, but to report himself from time to time to have his ears attended to.

IV.—TWO CASES OF EXTENSIVE ULCERATION AND CICATRISATION OF THE PHARYNX.

BY DR. J. GALBRAITH CONNAL.

The first case is that of a little girl, 6 years of age, who is brought forward as an illustration of the extensive ulceration

and cicatrisation of the pharynx which may result from scarlet fever. The anterior pillars of the fauces are almost destroyed, and there are only slight remains of the tonsils. The posterior part of the soft palate is adherent to the pharyngeal wall, and a small aperture is left leading from the naso-pharynx to the pharynx. The patient, as the result of scarlet fever, has also a purulent otitis media on both sides, and the pharyngeal condition adds to the gravity of the prognosis regarding the ear mischief.

The treatment adopted was syringing the ears with boracic solution, and a considerable improvement has taken place. Nothing has been done to restore the proper passage from the naso-pharynx to the pharynx, on account of the nervous and irritable condition of the little patient, but I hope to have an early opportunity of doing so.

The second case is that of a woman, 43 years of age, with extensive ulceration and cicatrisation of the pharynx, the result of syphilis.

When seen for the first time, early in the year, she complained of great pain from a gummatous mass in the right pharyngeal wall, which disappeared under treatment. There is perforation of the soft palate in addition to cicatrisation of the pharynx, and these morbid changes are more marked towards the middle line, in this respect making a good contrast case with the preceding one, where the cicatrisation—the result of scarlet fever—is more marked in the lateral walls of the pharynx.

So far as could be made out, she had the secondary sore throat about twenty-three years ago, but she affirms that her throat has never troubled her again till early in this year, when she presented herself for treatment. She is married, and has had one child, now a woman of 25 years of age. There have been no miscarriages.

V.—CARCINOMA IN A CAT.

By DR. G. H. EDINGTON.

The specimens are from the body of a female cat, which was sent to Professor J. R. McCall of the Veterinary College.

For four months previously there had been progressive enlargement of the abdomen, and latterly loss of appetite, with great emaciation, had been observed. She was sent to Mr. McCall with suspicion of having in the uterus dead

kittens. On examination, a large tumour was detected, and the animal was accordingly destroyed.

Post-mortem examination: Thorax.—The heart and lungs are apparently normal.

Abdomen.—Situated in the middle line on the central tendon of the diaphragm and on its thoracic surface is a small, nipple-like projection. This a part of a tumour which is seated on the abdominal surface of the diaphragm. On this surface several nodules are present, varying in size from that of a pin-head to that of a small bean (1.25 cm. in diameter). These are grouped for the most part on either side of the suspensory ligament of the liver.

On the convexity of the extreme left lobe of the liver is a round, white tumour-mass, measuring 1.8 cm. in diameter. It has a raised, nodulated margin, and is depressed in the centre (umbilicated). No glands are found in the portal fissure, but a nodular mass (3.75 cm. in diameter) occupies the gastro-hepatic omentum.

The great omentum contains between its layers a similar mass; this is of the size of a small cocoanut, and measures 12.5 cm. in diameter. On turning up the omentum, a smaller tumour is found on its posterior surface behind the greater curvature of the stomach, towards the pyloric end. This tumour measures 3 cm. in transverse direction.

The spleen and pancreas are apparently unaffected.

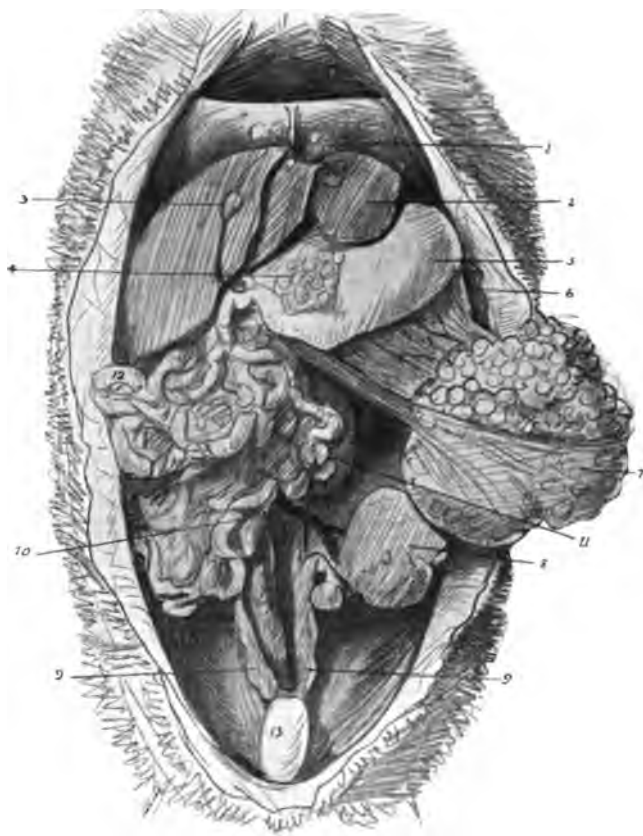
In the mesentery there are present, here and there, enlarged glands, and one of these, in the neighbourhood of the cæcum, is calcified. The great intestine has no connection with the omentum, and measures a little less than 30 cm. in length.

At the upper end of the left Fallopian tube is a large tumour. This tumour, where it joins the tube, is hard and nodular, like the masses in the omentum, but in its upper two-thirds it is of soft consistence and greyish colour. The whole mass is ovoid, and its long axis measures 5 cm. It is clearly in connection with the ovary. On the mouth of the Fallopian tube is seated a cyst of about 1.8 cm. in diameter and with clear fluid contents. The right ovary is not present.

Examination of abdominal wall failed to show any trace of mammary glands, although nipples were present.

Microscopic examination was made of the nodules in diaphragm, liver, great omentum, and ovary. All of the specimens showed the tumour to be composed of small, round, epithelial cells, with an alveolar arrangement in loculi of fine connective tissue. Vessels are present filled with blood, and, though lying in close contact with, are separated from tumour





CARCINOMATOUS TUMOURS IN CAT.

1. Diaphragm—nodules on under surface; above is the thoracic cavity.
 2. Liver—with nodule. 3. Gall-bladder—fundus of. 4. Tumour mass in
 gastro-hepatic omentum. 5. Stomach. 6. Spleen. 7. Tumour-mass between
 layers of great omentum; anterior layer partially torn open. 8. Tumour—
 left ovary. 9—9. Uterine cornua. 10. Enlarged left ovarian vein. 11. Left
 kidney. 12. Small intestine. 13. Urinary bladder.

tissue by well-formed walls. The alveolar arrangement is seen in greatest perfection in sections from mass in great omentum. With regard to the ovarian tumour, the soft upper portion is found to have undergone necrosis in greater part. Here and there are isolated epithelial cells of large size, but staining badly. It is evidently ovarian tissue. The lower part is pure tumour tissue, and a sharp line of connective tissue with nuclei of both rod and spindle-shape separates the two portions of the mass.

In the liver the tumour tissue is seen infiltrating the connective tissue and disintegrating the hepatic cells and the diaphragmatic muscle-fibres. The epithelial cells are also found in lymph spaces.

REVIEWS.

Aphorisms, Definitions, Reflections, and Paradoxes: Medical, Surgical, and Dietetic. By A. RABAGLIATI, M.A., M.D., F.R.C.S. Ed. London: Baillière, Tindall & Cox. 1901.

IN these pages will be found philosophisings on health and disease, and the way to obtain the one and avoid the other. The author only quotes the ancient writers on medicine, and considerably simplifies the task he has set himself by his complete indifference to the teachings of up-to-date pathology and medicine. The principal feature of the book is the frequently reiterated statement that the chief predisposing causes of disease are over-feeding, and improper feeding, or both combined, termed by the author "poly-siteism, kako-siteism, and pollaki-siteism."

According to Rabagliati, "disease and health differ from one another in degree rather than in kind. Health is present when shrinking and swelling—*izanic* and *cedunic* states—alternate within very narrow limits, and disease sets in when the limits of these alternations are exceeded." The unity of disease is insisted on; "it is one fundamentally with many different phases or manifestations. The essence or property of a disease is that it is present; its accident is the place in the body where it appears. The immediate source of all the materials of the body is the blood, derived from the chyle, which in turn comes from the food; thus out of the same

chyle is made blood which may cause corns, or cancer, or diabetes, or pneumonia, or, in fact, every ailment and disease." Hence, it follows that all disease is due to poly-siteism, pollaki-siteism, or both combined. "Local ailments are almost always the local expression of general states of the body." Specialism in medicine is objected to. Many surgical ailments might be cured without the help of the surgeon, and many more prevented by a restricted diet, "properly quantified and chronized," and by and by the layman might use for his own purposes *the principles laid down by scientific medicine*—the italics are ours—and might not therefore require to consult the medical man at all. "'Tis a consummation devoutly to be wished," and while sympathising with Rabagliati in his attempt to convert the world to "oligo-siteism," we feel that, in making this his Morrison's pill, he has, "like the too eager archer, o'ershot the mark."

The language of this book is terribly involved, and there is an alarming plethora of Greek words and prefixes. A new name, "initis," is suggested for rheumatism, and "pan-eilemmatitis" for inflammation of fibrous tissue. We must confess that we long for simple Saxon after reading, "when pan-eilemmatitis or even poly-eilemmatitis is present, the state of the bodily health is very bad; but if, in addition to this, there is pan-parenchymatitis or even poly-parenchymatitis, the case is hopeless indeed; since such conditions mean pan-hæmatitis, a state that generally requires a long time to induce it, but which, when induced, is mortal." Whatever does it all mean?

The author's idea that "in anæmia—a constipation of the circulation—the process is plainly one of starvation due to over-repletion, caused by contraction of hypertrophied or over-fed muscular tissue," is distinctly novel, and, like his explanation of that which does not exist, smacks of an archaic philosophy, which we thought we had outgrown—"The process is really a beautifully adapted provision of Nature to limit the blood supply to parts which have already been over-nourished, and which would tend to become still further hypertrophied if the nutritive process were carried still further."

Arguing from the datum that all disease is due to the same cause—poly- and pollaki-siteism, it will be readily understood how the author has built up and coined paradoxes which exist only in his own imagination. It must be admitted, however, that in the author's hands treatment by means of restricted diet has cured many diseases; of those not usually

amenable to treatment may be cited cases of diabetes and emphysema, while of those usually regarded as only fit for surgical measures may be mentioned hæmorrhoids and urethral caruncle.

"We want a philosophy rather than a science," says Rabagliati, and "we have made so many careful and accurate observations that it is far more incumbent on us to make a good use of the observations we have already made than to add to them." We could not have better evidence than this work affords of how essential it is to be making careful and accurate observations oneself, instead of merely forming generalisations on the observations of others made centuries ago, and how, without such a corrective, there is no limit to the unlicensed philosophising of the academic philosopher. It cannot be said that in medicine onlookers see most of the game, and, in our opinion, Rabagliati is attempting to set back the hands of the clock in advocating that the laboratory and the bedside should be supplanted by the study.

Practical Gynæcology. By E. E. MONTGOMERY, M.D. With 527 Illustrations. London: Rebman, Limited. 1900.

OF the many text-books on gynæcology which have appeared during the last few years, this work, as a clinical guide to the busy practitioner, is certainly in the front rank. It gives evidence of an extensive acquaintance with the modern literature on the subject, but it is no mere compilation. The author everywhere draws upon his wide experience for the various clinical data, and the deductions he makes from these are the result of mature judgment. A commendable feature of the work is that it is evenly balanced. The surgical means of treatment are well and even fully considered, while medical treatment, too much neglected by most writers of gynæcological text-books, is also given in detail. The illustrations, which are numerous and finely executed, have enabled the author to render the text more concise and more easily comprehended. This is especially true with regard to the successive stages of the many operations which he describes.

In the arrangement of the subject the old anatomical classification has been wisely discarded. The following are the titles of the various sections into which the book is divided:—Diagnosis, Therapeutics, Anatomy, Physiology, Malformations (including fistulæ and lacerations), Inflamma-

tion, Deviations of the Pelvic Organs, Genito-urinary Hæmorrhage and Ectopic Gestation, and, lastly, Tumours.

Under the second heading the author gives a clear and helpful description of the various preparations for, and mode of performing, abdominal section. With regard to the vexed question as to the best plan of suturing the abdominal wound, he says the method which he has found most satisfactory is, first to close the peritoneum with a continuous suture of catgut, and then to insert interrupted silkworm-gut sutures through the entire thickness of the abdominal wall above the peritoneum. Before tying these, he dries the surface carefully and approximates the aponeurosis by means of a continuous catgut suture.

Thirty-two pages are devoted to the treatment of fistulæ. Due prominence is given to Ferguson's operation, the special feature of which is the formation of a circular flap hinged at the edge of the fistula. This flap is drawn over the opening by a continuous catgut suture inserted at the free edge of the flap, the vaginal surface of which is thus made to form a part of the vesical floor. The resulting raw surface on the vaginal wall is next closed by interrupted silkworm-gut sutures. This method can be adopted in all kinds of fistula, and deserves a wider recognition than at present obtains.

Of the many operations devised for laceration of the pelvic floor, those which Dr. Montgomery recommends are the Simon-Hegar's in incomplete tears, the Emmet's or Dudley's when there is rectocele, and the Sænger-Tait's in complete rupture.

The author's aim throughout having been to make the book as practical as possible, diagnosis and treatment are discussed in detail, while comparatively little space is given to anatomy, and still less to physiology and pathology. The result is a work which, as a clinical guide to the diseases of women, can be recommended with confidence to the general practitioner, and might be perused with profit also by the specialist in gynecology. The publishers are to be congratulated for their share in its production.

Outlines of the Diseases of Women. By JOHN PHILLIPS, M.D., F.R.C.P. Third Edition. London: Charles Griffin & Co., Limited. 1901.

THE third edition of this little work has been enlarged by the addition of several paragraphs in the chapters on "Fibro-

myomata of the Uterus" and "Ectopic Gestation," and by a short chapter on the "Bacteriology of the Genital Tract." This chapter, though necessarily short and elementary, contains much information, and adds greatly to the value of the book for those preparing for examination. In the chapter on uterine fibro-myomata we find the following given as one of the "practical deductions" as to treatment:—"If interstitial or sessile (growing) try prolonged palliative treatment, then Apostoli's method." We cordially agree that before operative treatment is adopted palliative treatment should have a fair trial, but if that should fail, we venture to submit that Dr. Phillips will not find many gynaecologists who will advise their patients to waste further valuable time on Apostoli's treatment.

The style is clear, and the book is deservedly popular with those for whom it is intended.

Obstetrics: A Manual for Students and Practitioners. By DAVID JAMES EVANS, M.D. With 149 Illustrations. London: Henry Kimpton. 1901.

WE can thoroughly recommend this small text-book to both students and practitioners. By a conscientious exclusion of all padding and all subjects of little importance, the author has managed to produce a "short, concentrated treatise on the science and art of obstetrics," which will well repay careful study. The information given on nearly every subject is reliable, and, when the size of the book is taken into consideration, remarkably full. Very little of real importance has been omitted. We consider it a mistake, however, not to have found room for a short account of deciduoma malignum.

In the first half of the work, normal pregnancy, labour, and puerperium are dealt with, while the second half is devoted to the pathology of these three departments of the subject. In the chapter on the diagnosis of pregnancy, the author has adopted the helpful plan of dividing the nine calendar months into *trimesters*, and classifying the symptoms and signs under each. The management of normal labour is very fully considered, and the instructions regarding asepsis and antisepsis will be found reliable. There is a good description, also, of the best methods of abdominal palpation before or during labour.

The various operations commonly employed in obstetrics are considered together in the closing chapter, and are clearly

described. We note that the author is of opinion that the frequent bad results of symphysiotomy outweigh its advantages. His advice to limit the use of the axis-traction forceps to the high operation is generally, and rightly, we think, regarded as a mistake in this country.

A few errors, such as the curious substitution of "Paget" for "Pajot," on page 386, will require correction in the next edition.

Atlas and Epitome of Ophthalmoscopy and Ophthalmoscopic Diagnosis. By PROFESSOR DR. O. HAAB. Authorised Translation from the Third Revised and Enlarged German Edition. Edited by G. E. DE SCHWEINITZ, A.M., M.D. With 152 Coloured Lithographic Illustrations. London: W. B. Saunders & Co. 1901.

THE *Atlas* consists of eighty coloured plates, which include from one to seven figures apiece. Opposite each plate is an appropriate detailed description. Outline, detail, and colouring of the plates all deserve great praise. Preceding the coloured plates, there are about seventy pages of illustrated letterpress, devoted to an exposition of the ophthalmoscope, and the methods of using it. With regard to this, we would only remark that the student of this country who wishes to get the finest ophthalmoscope in the market should not buy any of those recommended by Professor Haab, or by his American editor, but should keep to Morton's, which was devised by a British ophthalmologist, and which here, by simple merit, holds the premier place.

This is altogether an admirable work. Its dimensions are smaller than those of ordinary atlases, so that it is easily portable, and can be kept on the same bookshelf as kindred works. It ought to be procured by all who wish to master ophthalmoscopic work, whether physicians, oculists, or students.

Guide to the Microscopic Examination of the Eye. By PROFESSOR R. GREEFF, Berlin. Translated from the Second German Edition by HUGH WALKER, M.A., M.B. Glasgow. London: Rebman, Limited. 1901.

THE fact that this little work has already passed into a second edition in Germany, whilst translations into Japanese, French,

and English have been undertaken, indicates the favour with which it has been received.

None the less, it will be regretted by many that the book has been given the precise form in which it appears. So large a proportion of it is occupied in giving minute details of process of fixing, embedding, staining, &c., which might well be learned by the student from a general work on microscopic *technique*, that the author's wide experience and knowledge of ophthalmic histology seems to remain too much in the background.

Had the proportions of the general and special parts been reversed, many points might have been dealt with which, although of special interest and importance, have been omitted.

The translator has accomplished his object with credit.

The book is singularly free from error, is well printed, and has a good index.

The Nervous System and Its Constituent Neurones. By LEWELLYS F. BARKER, M.B. London: Henry Kimpton. 1900.

THIS book by Dr. Barker we consider one of the most important works on the nervous system that have appeared within recent years. The advance in this department of medicine since the discovery of the newer methods of histological research has been immense; but the workers are scattered over so many lands, and their papers appear in such a variety of publications, that it has been all but impossible for the individual to keep himself abreast of recent neurological literature. The neurone theory, too, has changed our conception of the anatomy of the nervous system, and the older systematic works on the subject are, therefore, somewhat out of date. So that, in giving us his clear and most exhaustive account of all that is at present known of the normal and pathological histology of the nervous system, Dr. Barker has made a contribution to medical literature the importance of which one can scarce too highly estimate. The book, then, is most opportune, and fills a want which for some years past has been badly felt.

The plan of the book is briefly sketched in the preface:—
“In the first part of the volume the newer conceptions of the histology of the central and peripheral nervous organs are reviewed. In the succeeding chapters the attempt has been made to apply the neurone conception, that is, the cell doctrine,

as consistently as possible in the explanation and description of the complex architectonics of the nervous system." The neurone is considered from many points of view—from the historical as well as the histological; from the point of view of embryology and of physiology. We have the various neurones classified, as also an account of their degenerative and regenerative processes. Subsequent chapters deal with the grouping of the neurones. The sensory ganglia on the posterior roots, in the spinal cord, medulla, and pons, are all fully described. The motor nuclei of pons and medulla are also discussed, as well as the grouping of motor cells in the anterior horns of the cord. The neurones of the cortex are likewise discussed. It is all well done, and a difficult subject is treated in a masterly fashion.

The book is freely illustrated, and, indeed, the illustrations are one of the special features. The author rightly says that "no apology is necessary for the rather profuse illustration of the volume, for all experience teaches that, in morphological studies especially, the form relations are most easily grasped from the examination of good pictures and models than in any other way, and that one well-chosen illustration with a satisfactory legend is often of greater value to the student than many pages of laborious and exact description." Special attention has, therefore, been paid to the selection of the illustrations, with the result that we have gathered together into this one volume reproductions of original drawings which were formerly scattered through a very varied and often inaccessible literature.

The book is well printed and handsomely bound; it reflects much credit on its publishers as well as on its author.

Saunders' Year-Book of Medicine and Surgery. Medicine.
Edited by GEORGE M. GOULD, M.D. London: W. B. Saunders & Co. 1901.

IN its general management and form of publication this volume of the *Year-Book of Medicine and Surgery* is precisely similar to the corresponding volume of last year. Its standard of excellence, too, is well maintained, and the care which the various editors have given their several departments has produced a work of such uniform merit as must be most gratifying to Dr. G. M. Gould, the general editor.

The book, of course, is only one for reference, indeed, it is a

sort of index to and synopsis of the more important papers that have appeared during the year; and such being the case, one does not look for anything more. But would it not be an improvement, in another year, to have as an introduction to each section a short general survey or summing up of our progress in that department of knowledge during the year? In this way the *Year-Book* would become less impersonal, and its readers would have the advantage of the editor's views in regard to the papers under consideration. Such additions being short need add but little to the bulk of the volume, and we are sure they could not but increase its interest and usefulness.

The book, as in former years, is well printed and well illustrated, and we have every confidence in recommending it to the consideration of our readers.

A Manual of Surgical Treatment. By WATSON CHEYNE, C.B., F.R.C.S., and F. F. BURGHARD, M.D., M.S. In six parts. Part V: The Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea; and the Intrinsic Diseases of the Nose, Ear, and Larynx, by H. LAMBERT LACK, M.D., F.R.C.S. London: Longmans, Green & Co. 1901.

WE are not surprised to find that the authors have found themselves unable to keep this part within the modest dimensions of the former ones, and that, instead of a volume of about 300 pages, we are presented with one of nearer 500. This increase is mainly due to the division devoted to the description of the treatment of the intrinsic diseases of the nose, ear, and larynx, which the authors have handed over to a specialist in that department. It is always a difficult point to draw the dividing line between the work of the general surgeon and the specialist, but we should certainly have excused the authors if they had meted out the same measure to the diseases of the larynx, &c., as they have to those of the eye, and left them out altogether.

To the general surgeon, the most important and interesting portions of this volume are those that relate to the surgery of the brain and middle ear, and the surgical treatment of trigeminal neuralgia. In discussing intracranial suppuration, the authors describe it as following compound fractures of the skull, and as taking place "with or without an intervening

inflammation of the cerebral membranes or adhesion of those membranes to one another," but they do not mention the influence of suppurative diploëitis, and the part played by septic thrombosis of the longitudinal and lateral sinuses in the production of cerebral abscess. We had under our observation some time back, a case in which the inner table of the skull was not fractured, but suppurative diploëitis ensued, and a large abscess formed in the cerebral hemisphere of the same side. In speaking of temporo-sphenoidal abscess due to middle ear disease, they appear to regard brain infection as most likely to take place by adhesion of the cerebral dura and arachnoid in the region of the tegmen tympani; while, possibly, this may sometimes take place, it does not appear to us to be the most common course of infection, which we regard as being by perivascular and other lymphatic channels.

In regard to craniectomy for microcephalus, the authors have no encouraging word to say, but speak more hopefully of the possibility of doing some good by means of operation in hydrocephalus. They have seen somewhat hopeful results in cases which were congenital, and have been less successful where the child was born apparently healthy, and the hydrocephalic condition came on in the early years of life. The mode of treatment consisted in the establishment of a drain between the lateral ventricles and the subdural cavity, by means of strands of catgut or even by indiarubber drainage-tube. The early results were excellent, the head rapidly diminishing in size, the bones coming together, and the consolidation of the skull proceeding steadily. In the course of three or four months, however, the children died, with symptoms suggestive of progressive basilar meningitis. The authors hold to the hope that further experiments will have more fortunate results; in any case, there is so little hope without operation that something may be ventured.

We can unreservedly commend the full, clear, and well-illustrated descriptions of plastic operations on the face (including the operations for hare-lip and ectropion), and those on the repair of cleft palate.

We fail to see the force of the authors' reasoning when discussing the value of osteoplastic flaps in exploring for tumours of the brain. They say—"Some surgeons have advocated the use of an osteoplastic flap, which has great advantages in cases where the tumour is to be removed; a great objection is, however, the additional length of time which the operation takes, and the difficulty in cutting the

flaps. It is obvious that such a procedure can be employed only comparatively rarely, as it demands, in order to render the prolongation of the operation justifiable, the accurate diagnosis and localisation of a small and easily accessible tumour." The two statements that (1) the osteoplastic flap operation is only available when accurate focal diagnosis can be made, and (2) that it is a long and tedious process, both seem to us the exact reverse of the truth. Certainly, the great advantages claimed for that method are, that a large area of the brain surface can be exposed by a single flap, and can in this way be explored, so that the accurate focal diagnosis called for in trephine operations is not so imperative; and that the operation can be rapidly accomplished. Then, again, whether the bony flap be made by the "parting tool," as in Hartley's method, or by the combined use of trephine, Hoffman's forceps, and Gigli's saw, as described in this work (page 95), it remains capable of reposition with a certainty of its living, a matter of considerable importance for the future comfort and safety of the patient.

Considerations of space prevent our entering on a detailed criticism of Dr. Lambert Lack's portion of the volume, but we may say that it appears to us to be a clearly expressed and admirably condensed description of all that is essential to the general surgeon regarding the surgery of the nose, ear, and larynx. The chapter on the anatomy of the nose is altogether out of place in a work of this character, but no doubt Dr. Lack will plead that the ordinary text-books of anatomy give a very poor and "unworkable" description of the nasal cavities.

We regard Part V as by far the most satisfactory of the several sections of this work yet published.

The Students' Manual of Venereal Diseases. By F. R. STURGIS, M.D. Seventh Edition, Revised and in part Rewritten, by the Author and FOLLEN CABOT, M.D. London: Rebman, Limited. 1901.

AN American medical book without a single illustration is almost as unusual a phenomenon as was a black swan in classic times, yet the present work is that *rara avis*. Another peculiar character of this book is that its letterpress is as liberally italicised as the correspondence of an hysterical lady, or the note-books of a student in the months immediately preceding his examination. Originally written and delivered as lectures to the students of the University of the State of

New York, the lecture form has been retained, and, in spite of there being now two authors, the first person singular is used throughout. The design of Dr. Sturgis, as set forth in the preface to the first edition, has been thoroughly kept in view. "Written for students of medicine, it has been my aim to make the book concise, and at the same time practical. I have, therefore, as far as possible, eschewed all mooted points in venereal medicine, and confine myself to giving a careful, and at the same time condensed, description of the commoner forms of venereal diseases which will fall to the lot of the average young practitioner to treat, together with the most appropriate remedies." The teaching is dogmatic, commonsense, and supported by experience. The authors do not aim at novelty, and are not afraid to face the accusation of being old fashioned, yet they describe the abortive treatment of gonorrhœa, and express a modified approval of recurrent irrigation of the urethra, guarded, however, by the condition that it should be done by the surgeon, and not left in the hands of the patient himself.

We can commend the work to those for whom it is specially written—namely, medical students and young practitioners—as a thoroughly sound and reliable account of the symptoms and treatment of venereal disease.

A Retrospect of Surgery during the Past Century: Being the Hunterian Oration of the Hunterian Society, 1901.
By JOHN POLAND, F.R.C.S. London: Smith, Elder & Co. 1901.

IN the copy of this lecture sent to us for review, four pages have been printed twice over, and four pages are consequently wanting. We have, as the result of this error, had some difficulty in following the course of the author's thought, and may therefore run some risk of judging him unfairly. We cannot say that we have found anything particularly fresh or striking in those pages intelligible to us. The "Oration" is for the most part a repetition of the stock descriptions of the readers of introductory lectures, so familiar to everyone of us. Where the author ventures on anything novel, he is much too optimistic to be a reliable prophet. Thus, we cannot share his opinion that the mere count of leucocytes in the blood will settle the question as to whether suppuration is going on in the body.

A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners. By JAMES NEVINS HYDE, A.M., M.D., and FRANK HUGH MONTGOMERY, M.D. Sixth and Revised Edition. Illustrated with 107 Engravings and 27 Plates in Colours and Monochrome. London: Henry Kimpton. 1901.

It seems only the other day that we called attention to the fifth edition of this popular treatise. The first edition appeared in 1883, the second in 1888, the fourth in 1897, and the fifth at the close of 1899. A year, therefore, sufficed to exhaust the last edition, which, moreover, was larger than any of its predecessors. The authors carefully revise each new edition to date, and in the present instance they had to do this earlier than had been expected. Three new plates and several new engravings have been introduced, and, apart from minor changes, the articles on the following subjects have been in great part rewritten:—Anatomy, general diagnosis, herpes simplex, herpes zoster, acne, psoriasis, sclerodermia, tuberculosis, blastomycosis, and carates. The volume extends to over 800 pages. The letterpress and illustrations are both worthy of praise. The worth of the text to the medical profession is sufficiently attested by the great demand for the volume.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

By DR. R. S. STEWART.

Cerebral Localisation of Melancholia. By Hollander (*Journal of Mental Science*, July, 1901).—It is contended that the evidence adduced in this paper points to the conclusion that a certain relation exists between the central area of the parietal lobe, namely, the angular and supramarginal gyri, and melancholic state of mind. This is shown by over fifty cases of injury to the parietal tuberosity which were severe enough to affect the brain or its membranes, and from the fact that half of these cases recovered under surgical operation. It is shown also by the mental symptoms accompanying tumours growing in and limited to this area, by the effects of inflammatory diseases limited to this region, and by the idiopathic hæmorrhage sometimes occurring under the parietal protuberance. It is pointed out that the symmetrical atrophy frequently observed to take place in the parietal protuberance is due to a trophic change accompanying a melancholic state, and that cranial disease affecting this brain area and congenital abnormal development of this region may also originate melancholia.

It is argued that simple melancholia has as its basis a morbid condition of the emotion of fear. This emotion, though all prevailing, must take its start in a limited portion of the brain, which area, when fear is manifested morbidly, as in the different degrees of melancholia, must betoken some lesion. Experimental and anatomical evidence is adduced showing that the physical expression of fear and its related states can be produced in animals by the excitation of the central parietal area, that this same area has a close connection with the sympathetic nervous system and the vasomotor nerves, which are both affected in melancholia, and that in lesions of this area rise of blood pressure, alterations of sensibility, disturbances of vision, and cortical blindness may accompany the melancholic state.

General Paralysis and Syphilis. By Stoddart (*Journal of Mental Science*, July, 1901).—This writer concludes that syphilis is so frequent an antecedent of general paralysis that the non-syphilitic cases (if such exist) may, for the present, be regarded as a negligible quantity. Inasmuch as syphilis is common among uncivilised peoples, while general paralysis is almost unknown, it is contended that there must be some element in civilisation that aids syphilis in causing general paralysis, and it is hazarded that this may probably be mercurialisation, the result of the customary treatment.

Syphilis in the Nerve Centres of the Indigenous Inhabitants of Algeria. By Scherb (*Archives de Neurologie*, July, 1901).—Syphilis is extremely frequent among these people, but syphilitic affections of the nerve centres are, on the contrary, very rare. General paralysis and tabes are never met in this part of the population, while amongst the Europeans and Jews paralytics and tabetics abound.

The importation of syphilis into Algeria has been relatively recent, and, as the writer somewhat cynically remarks, *le mal français* has been given to the Arabs before the other benefits of civilisation have had time to collaborate with it to produce these two affections.

Diabetic Paraplegia. By Marinesco (*Archives de Neurologie*, August, 1901).—In this, a typical case of diabetes, there was abolition of the patellar reflex and weakness of the cremasteric reflex, general muscular wasting, with distinct atrophy of the muscles of the legs, particularly the extensors, and inability to walk. The pathological changes observed were perinuclear chromatolysis and displacement of the nucleus in the postero-lateral group of nerve cells of the lumbo-sacral region of the cord, and degeneration of the peripheric nerves of the lower limb, particularly marked in the external popliteal. The cell change presented such a close resemblance to that which occurs in cases where the cells are separated from their axis cylinder, that it is regarded as arising secondarily to the nerve degeneration.

Lecithine in the Treatment of Diseases of the Nervous System. By Hartenberg (*Archives de Neurologie*, September, 1901).—As the result of four years' experience of this agent this writer is of opinion that it is always inoffensive, that it may be employed without inconvenience in the form of hypodermic injections, even in large doses, such as a gramme in the day, that it appears to influence more the general nutrition than the nervous tissue, and that it is only by its effect on the general state that it brings about an improvement in the nervous condition.

Hedonal. By Roubinowitch and Phillipet (*Archives de Neurologie*, September, 1901).—This hypnotic, which belongs to the urethane group, produces at first a rise of temperature, amounting to 0.2 to 0.5 degrees C., followed after an interval by a corresponding fall. Unlike chloral, it has very little effect upon the respiration or blood pressure, and it increases the proportion of urea excreted. Its fatal toxicity appears to be 1 gramme per kilogramme of animal weight. As regards its hypnotic action, it produced

sleep very rapidly, on an average one and a half to two hours after ingestion, without any preceding excitement, lasting, on an average, about four hours, and unassociated with any malaise. It is more certain in its action in cases where the insomnia is the result of painful conditions unassociated with mental affections.

Microbes in the Brain, the Cerebro-Spinal Fluid, and the Blood in Nervous and Mental Diseases. By Faure and Laignel-Lavastine (*Le Progrès Médical*, 31st August, 1901).—As the result of their investigations in 200 cases, these observers conclude that the infectious mental troubles are in reality toxic mental troubles. In patients attacked with various infections, which are often accompanied by very distinct and intense mental troubles, they have never found, either in the brain, cerebro-spinal fluid, or blood a microbic element to which one could impute a rôle in the genesis of the disease, and the same applies in the case of the insane who are in appearance suffering from infections.

Chloretone. By Dunton (*American Journal of Insanity*, July, 1901).—The necessity for care in the use of this hypnotic is demonstrated by the ill effects which resulted from its administration in 8 out of 9 cases of mental trouble associated with insomnia. These undesirable complications were such as to necessitate the discontinuance of the drug, and included the following, among others—painful œdema, stupor, vomiting, sometimes hæmatemesis, purpuric spots, distension of the abdomen with resulting dyspnoea, retention of urine, cardiac depression, and in one case coma terminating in death.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

A Cytological Examination of Pleural Exudations.—In the *Lyon Medical* for 11th August, 1901, MM. Barjon and Cade give an account of an examination of the pleural exudate in thirty cases in which there was fluid found in the pleural cavity. The chief object of the enquiry was to discover if the variety of leucocytes in the exudation varied with the different groups of cases. In classifying the cases the clinical diagnosis was in every case confirmed by bacteriological examination of the fluid, and, also, in most cases, by inoculation experiments.

The thirty cases were grouped into six different classes, and the results obtained were briefly as follows:—

Class 1.—Tubercular (ten cases). The fluid withdrawn usually deposited a fibrinous clot, but it contained but a small proportion of cellular elements, unless when there had been some hæmorrhage. The leucocytes were almost exclusively lymphocytes, and even in the cases where there had been considerable hæmorrhage, there was almost complete absence of the polynuclear leucocytes. Endothelial cells were usually absent, or very few in number. There were usually some red blood corpuscles, but they were not abundant unless there had been a definite hæmorrhage.

Class 2.—Cancerous (two cases). The fluid was usually tinged with blood and rich in red corpuscles, but it did not form a coagulum. There were no polynuclear leucocytes, but some special granular cells often arranged together in masses.

Class 3.—Due to hæmorrhagic infarction of the lung (three cases). The fluid was very rich in cellular elements, and there were always red blood corpuscles. There was a considerable proportion of polynuclear leucocytes, and a certain number of endothelial cells.

Class 4.—Hydrothorax due to cardiac and renal disease (eight cases). The fluid was always clear, showing little tendency to coagulate. It contained few cellular elements, there were always endothelial cells, some red blood corpuscles, some lymphocytes, but never any polynuclear leucocytes.

Class 5.—Due to pneumococcus (three cases). The fluid was very rich in cellular elements; it was fibrinous, and readily coagulable. There was a marked predominance of the polynuclear cells, and always some red corpuscles; very few endothelial cells.

Class 6.—Purulent (four cases). The fluid contained only polynuclear cells, mostly undergoing degeneration.

In summing up, the authors contend that they have shown that a histological examination of the pleural exudation may greatly aid in the differential diagnosis of the various forms of pleural effusions. If there is an *absence* of polynuclear leucocytes, then the case must be tubercular, cancerous, or simply a hydrothorax. The first of these is distinguished by the presence of lymphocytes, the second by its special granular cells, and the third by the comparatively large proportion of endothelial cells. If polynuclear leucocytes are *present*, the case must be purulent, due to a hæmorrhagic infarction, or due to the pneumococcus. Of these, it is only the latter two that may be confused; but with the pneumococcic form the proportion of polynuclear cells is considerably greater than with the pleurisy due to infarction, and this will aid in distinguishing them.

A Case of Myoclonus Multiplex.—This case was shown by Dr. Raymond Bernard before the Société des Sciences Médicales de Lyon on 20th March, 1901. The patient, who was a soldier, was subject to attacks of a trembling or tremor, of variable duration, and of somewhat abnormal characters. When the attacks were severe they would be ushered in by the patient falling to the ground, his legs seeming to give way under him. There would be no loss of consciousness at these times, and no impairment of muscular movement. But the patient seemed to have lost the power to stand or to walk; he had, indeed, an attack of astasia-abasia. Associated with the above phenomena was a generalised myoclonus or trembling, the rhythm of whose oscillations was regular, the rate being from 7 to 8 per second. The attacks came on on an average about once a fortnight, and sometimes the clonus was generalised, as above described, but more often it would affect only the muscles of the arms. The clonus in the arms could always be produced by making the patient write or perform any other such movement. The tremors were always symmetrical and synchronous in the two arms, and, in addition to the movements in the muscles, there was also a slight movement of extension at the elbow-joints. Synchronous with the contraction of the whole triceps there were noted to be fibrillary and fascicular contractions in the pectoral and scapular muscles, and in the muscles of the neck. The above symptoms dated from a severe fright patient got when he was 7 years of age. Further examination revealed the fact that the patient had certain signs of hysteria. There was contraction of the fields of vision, paresis of the right arm, polyuria, painful spot in left iliac region; also, certain psychical stigmata, such as an abnormal fear of death, or a horror of the sight of blood. There never had been any convulsions.

The special interest of the above case lies in the association of the myoclonus with the symptoms of hysteria, for it has been maintained by certain neurologists that myoclonus should be regarded as nothing more than one of the motor phenomena of hysteria. —(*Lyon Medical*, 28th April, 1901.)

Case of Infantile Paralysis with Involvement of an Ocular Muscle.—Dr. A. J. Wood reports this case in the *International Medical Journal of Australasia*, 20th May, 1901. The patient was a child, 2 years old. The illness set in with fever, fretfulness, and disinclination for food. The next morning it was noted that the child could neither stand nor take hold of anything in the hands, and in the evening the left eye was observed to be

turned inwards. The child was seen again ten days later, when there was marked wasting and palsy in the left leg, and a definite paralysis of the left external rectus muscle. Two months later still, there was considerable improvement in regard to both the leg and eye condition.

Excessive Eosinophilia in Trichinosis.—The patient, a young man, aged 21, ate pork sausages which had not been thoroughly cooked. He subsequently suffered from gastro-intestinal disturbances and severe pain in the muscles. The sausages were suspected, and, on examination, were found to contain trichinae. The blood was not examined till after the acute stages had passed off, but even then the eosinophile corpuscles amounted to 30 per cent. The blood-count was as follows:—Eosinophile, 30 per cent; polynuclear, 55 per cent; transitional, 7 per cent; large mononuclear, 5 per cent; small mononuclear, 3 per cent.—(Dr. Patek, *American Medicine*, 15th June, 1901.)

Intermittent Claudication.—By Dr. David Riesman (*American Medicine*, 25th May, 1901). The chief symptoms of this somewhat rare condition are briefly as follows:—The patient sets out for a walk, and walks a short distance with ease. Then he has a feeling of numbness and pain, and often cramps in one or both legs, usually in the calves or in the feet. To walk farther is impossible, and patient has to sit down and rest. After a few minutes locomotion can be resumed, only, however, to be interrupted by a return of the cramps in the legs. The patient in this way becomes intermittently lame or limping, and hence the name intermittent claudication.

Examination of patient reveals absence of pulsation in the vessels of the feet, chiefly the dorsalis pedis, often the posterior tibial, and rarely in the popliteal and femoral. Pulsation in the dorsalis pedis is practically never absent in health (unless in oedema of the feet, or in marked arterio-sclerosis), and is almost without exception absent in cases of intermittent claudication. Otherwise than the difficulty in walking there are few other symptoms to note. The patient sometimes complains of some subjective sensations, such as numbness or formication in the legs, but there are no objective sensory phenomena to be recorded. Vasomotor troubles are, however, common, such as pallor, coldness and dryness of the skin, and, more rarely, local syncope and other forms of Raynaud's disease. An obliterative endarteritis of the peripheral vessels is the most common lesion found *post-mortem*. Marinesco noted some peculiar alterations in the muscles themselves, and some other writers have described changes in the peripheral nerves. The causes of the condition are the same as those of arterio-sclerosis, but there must be, in addition, some vasomotor disturbance, for only few cases of arterio-sclerosis show symptoms of intermittent claudication. The pain is doubtless due to cramp in the muscles, and this, in turn, to some defect in the blood supply. Probably, when at rest, the muscles are sufficiently well supplied with blood, but the additional supply required for walking is not forthcoming, and hence the symptoms.

Dr. Riesman reports in detail a case of intermittent claudication which has come under his own observation, but as the symptoms are practically the same as above noted, it seems unnecessary to refer to the case further.

MATERIA MEDICA AND THERAPEUTICS.

By R. BARCLAY NESS, M.A., M.B., C.M.

The Hypnotic Value of Dormiol.—Dormiol, $\text{CCl}_3\text{C}(\text{OH})_2(\text{CH}_3)_2$ (C_2H_5), is a chemical compound of equal molecules of chloral and amylene hydrate. Its chemical name, therefore, would be dimethylethylcarbinolchloral

or amylene-chloral. At ordinary temperatures it is a colourless, limpid, oily fluid, with a specific gravity of 1.24, and it is not decomposed by boiling. It is volatile, with a peculiar penetrating odour, and an aromatic, slightly burning taste. It is readily soluble in alcohol and the fatty and ethereal oils. With an equal quantity of water it forms a milky fluid, which slowly becomes a perfectly clear 50 per cent solution of the drug, and in this form is supplied to the trade. It is usually dispensed in a 10 per cent aqueous solution; but this weak solution is not permanent, and has to be kept cool and from light. For a full report of the chemical properties of dormiol the reader is referred to an article by its inventor, Dr. E. Fuchs, in the *Zeitschrift für angewandte Chemie*, 1899, No. 49.

Although the taste is not very agreeable, patients take weak solutions remarkably well. When given several hours after food it gives rise to no disagreeable gastric sensations. The appetite is unimpaired even under its continued use, and it is not constipating. It probably is not decomposed in the stomach, but circulates in the blood unchanged. It is very rapidly absorbed, often producing its systematic effects within fifteen minutes after ingestion. In over two hundred and fifty instances in which its effects were closely watched no depression of the heart or respiration was noticeable beyond that natural in quiet sleep.

In the vast majority of instances it has proved of eminent value as one of the safest, surest, and quickest hypnotics that we possess, particularly in the various stages of mental depression.

The duration of the sleep varied from one hour to ten and a half hours. The average duration was five hours. When the patients awakened in one or two hours they were apt to be somewhat drowsy and quiet for some time thereafter; but after a sleep of four or five hours they almost invariably showed no further effects of the drug, and immediately continued their talk or activity as if no interruption had occurred. In no case did anyone complain of subsequent headache or other disagreeable subjective symptoms, which so often follow the administration of chloral and some other hypnotics.—(Brownrigg, *The Therapist*, 16th September, 1901, p. 198.)

A Means of Increasing the Effectiveness of Bromides in the Treatment of Epilepsy is discussed in a short article in the *Therapeutic Gazette* for 15th November, 1900. It is based upon the endeavour to render the body more sensitive to the action of bromides by withdrawing the chlorides from the diet, the bromides then taking the place of the chlorides in the system. It is generally held that half an ounce of salt is required by a man of average weight every day, and at least 35 grains should be provided, though he will not thrive on this. If a diet consisting of milk, eggs, meat, meal, and potatoes is taken, a small amount of chlorides is obtained, and the patient is thus starved of these food ingredients. If the bromides are then administered, Toulouse asserts that as much as 60 grains of bromide of sodium given each day, which may be later cut down to 30 grains daily, will cause a great decrease in the number of attacks. He even asserts that this method diminishes the number of convulsions 92 per cent, and the number of attacks of vertigo 80 per cent. Further experiment showed that neither the diet nor the bromides alone produced equally good results, and it was proved that in the condition of the body brought about by this method of treatment, small doses of bromides produce similar effects to large doses under ordinary conditions. It is believed that the most active forms of epilepsy are favourable to this kind of treatment, and if it be necessary to cut the quantity of salt down to the lowest possible measure, an absolute milk diet should be insisted upon. Rumpf believes that epileptic attacks are excited by the accumulation of certain unknown products of metabolism, and thinks that the mixture of potassium bromide, sodium bromide, and ammonium bromide produces better results than one of the bromides alone in a similar dose. This plan of treatment cannot be continued for a considerable time in consequence of the danger to nutrition, but will in all probability be useful in specially selected cases.

when it is necessary to produce rapidly a bromide influence.—(*Treatment*, March, 1901, p. 23.)

Intra-Pleural Injections of Nitrogen.—Lemke (*Journal of the American Medical Association*, 19th January, 1901) and Loomis (*Medical Record*, 9th September, 1900) write on the treatment of pulmonary tuberculosis by intra-pleural injections of nitrogen, the latter contributing details of 18 cases so treated by him in the last two years.

This method of treatment was first introduced by Murphy, of Chicago, the idea originating in the great improvement resulting from the accession of a pleural effusion in a case of phthisis. The improvement in the patient's general condition which often follows on the occurrence of a pleural effusion, or even sometimes of a pneumothorax, has long been known, indeed, as far back as the time of Stokes, and has led to the practice of leaving these effusions untapped unless extreme dyspnoea compels removal. After the effusion has been present for some time the pyrexia from which the patient previously suffered ceases, he gains in strength and weight, the improvement continuing after the disappearance of the effusion. In other words, the progress of the tuberculosis has been checked. The compression of the fluid has closed the lymphatic channels in the lungs by which tuberculosis is largely disseminated, and has put an end to bronchial aspirations of the sputa, another great method of spread, and the advance of the disease into healthy portions of the lung being thus arrested, the patient's vital powers have been sufficient to deal with and overcome the bacilli in the areas of older disease.

It is claimed also that the fibrosis which, as is well known, arises in any lung which is long the seat of compression, aids in the result.

Murphy was the first to show that the condition could be imitated without danger to the patient by the injection into the pleura of nitrogen, and that the gas would remain unabsorbed for weeks, or even months. The gas is introduced by a special apparatus through a trocar and cannula inserted in the eighth intercostal space behind the posterior axillary line (Loomis), the opening being sealed with collodion in the ordinary way at the end of the operation; 50–200 c.c. can be admitted, and, as a result, the lung is compressed, the diaphragm on that side becomes motionless, and the heart is displaced. So little dyspnoea is caused, as a rule, that the patients can walk about in a few minutes after the injection (Loomis). Should the breathing become embarrassed, the apparatus allows the flow to be reversed and the gas to be removed. Subcutaneous emphysema has been occasionally observed, and intoxication, but, as a rule, no bad result follows. The gas may remain for three to four months, or may have to be renewed in as many weeks.

By experiment on dogs Lemke has shown that complete re-expansion of the lung may be obtained after several (8) months' compression, slight desquamation of the epithelium lining the alveoli being the only change found.

It may be taken as proved, then, that by injection of nitrogen into the pleura a lung may be compressed without danger to the patient—even if the other lung is diseased—and that this compression can be kept up for some months without damage to the lung.

Great improvement is claimed as a result of the treatment, though this is hardly borne out by an examination of Loomis' report.

As a routine method for the treatment of phthisis it has no claim to displace the methods already in use.—(Perkins, *The Practitioner*, May, 1901, p. 583.)

Hæmostatic Medication.—In *La Presse Médicale* for 20th December, 1900, M. H. Vaquez gives an exhaustive *résumé* of the methods at our disposal for arresting hæmorrhage. This communication is reviewed at length by Wynter in *Treatment* (February, 1901, p. 907). From the latter paper the following extract is taken:—

The more modern hæmostatics are concerned with attempts at increasing

the natural coagulability of the blood by breaking up the leucocytes and hæmatoblasts, and so liberating the fibrin ferment which provokes the transformation of fibrinogen in the plasma into solid fibrin. In 1846 Virchow observed that coagulated blood contained always a certain amount of calcium, and this was confirmed by Brücke and others. Green in 1888, and Ringer and Sainsbury in 1890, again drew attention to this fact, but it was Arthur and Pagès in 1900 who showed that this was more than a coincidence, and that the presence of the lime salts was an absolutely indispensable factor in the process. By adding an alkaline oxalate to precipitate and separate the lime salts, they rendered the blood incoagulable, and by again adding a soluble calcium salt, such as the chloride, the power of coagulation was restored. Pekelharing showed that the nuclein provided by the leucocytes, as well as certain nucleo-albumins, such as extract of thymus or testicle, transformed the fibrinogen into fibrin as soon as some salt of lime was added.

Lilienfeld, pushing the chemical and physiological investigation still further, showed that the nucleus of the leucocyte furnished an indifferent substance—nucleo-histone; but that under the influence of the lime salts of the plasma this broke up into two active substances—histone, which exerted a restraining action on coagulation, and nuclein, which actually provoked it. Experimentally, the introduction into the blood of the nucleo-albumins of Pekelharing, or of the nucleo-histone of Lilienfeld (obtained from lymphatic gland), determined extensive thrombosis.

In the same way certain colloids (Grimaux) and gelatine (Dastre) are capable of increasing the coagulability of the blood. Later researches have shown that the injection of peptone into the circulating blood renders it coagulable for a certain time, though out of the body this is not so. Further, the injection of this incoagulable blood into another animal renders its blood also incoagulable. But if the influence of the liver is withheld, this anti-coagulating property of the peptone is no longer displayed. Apparently (as suggested by Fredericq) the blood is affected by two antagonistic influences, one tending to suppress coagulability, which seems to be connected with the lungs, the other tending to increase it or to re-establish it after suppression, and which is apparently associated with the abdomen (liver and intestine). It is as a result of these experiments that it has been suggested to use as hæmostatics the salts of lime, certain organic substances, and extract of liver. Calcium chloride cannot be used subcutaneously on account of the inflammation and sloughing it provokes, but the hypophosphites may be used internally, and the salts of strontium appear to have the same effect. In one instance of hæmophilia so treated by Wright the effect was transitory, and could not be maintained, and M. Vaquez met with but indefinite results in Bright's disease with epistaxis, in typhoid, intestinal hæmorrhage, and the hæmoptysis of phthisis. The effect of gelatine as a subcutaneous injection, locally applied or taken internally, appears more favourable. The organic products, including various extracts of liver, thymus, testicle, &c., and the nucleo-albumins promise to be more effective, but at the present time they are not sufficiently understood nor sufficiently under control to be safely employed clinically.

Gelatine as a Hæmostatic.—Under this heading there appears in *Treatment* (January, 1901, p. 824) a *résumé* of a paper by Dr. Ch. Amat, Médecin-Major de 1ère Classe, published in the *Bulletin Général de Thérapeutique* for 30th October. This deals with the experience gained with gelatine since the first experiments by Dastre and Floresco in 1896.

The original experiment consisted in the injection into the tibial vein of a dog, weighing 15 kilogrammes, of 80 to 400 cubic centimetres of a warm 5 per cent solution of gelatine, proving that the substance traversed the kidney and passed in the urine, which presented the appearance of transparent jelly, so that the containing vessel could be inverted without the contents being spilled. At the same time, blood obtained from the vessels coagulated instantaneously,

the true clot being formed in ten seconds instead of three minutes, and this at a temperature of 37°, jellification of the serum following when the temperature fell.

Since this time time gelatine has been used very often successfully in the treatment of aneurysm, hæmoptysis, gastro-intestinal hæmorrhage, metrorrhagia, epistaxis, purpura hæmorrhagica, &c., the gelatine in solution being administered hypodermically or by the mouth, or applied locally, according to the requirements of the case. This paper gives some details with regard to the use of gelatine in this way.

Treatment of Aneurysms by Subcutaneous Injections of Gelatine.—Miles, in a recent number of the *Scottish Medical and Surgical Journal* (July, 1901, p. 69), gives a note of what has been done lately with gelatine in the treatment of aneurysm.

Since Lancereaux, following up the work of Dastre, published in 1897 the result of the first case in which he had treated an inoperable aneurysm by the subcutaneous injection of a solution of gelatine, numerous similar observations have been recorded. The first patient on whom he tried the treatment had suffered for three years from a large aneurysm of the arch of the aorta, causing great pain. He injected into the subcutaneous cellular tissue about 250 cubic centimetres of a solution of 2 grammes of white gelatine in 100 grammes of sterilised normal salt solution, at a temperature of about 37° C. The injections were repeated at intervals varying from two to fifteen days, about twenty injections being sufficient to bring about a cure. The same observer has reported several other equally successful cases of aortic and subclavian aneurysms. In several cases—and this has happened to other observers—the clot which formed subsequently softened and the signs and symptoms of aneurysm were reproduced; but a renewal of the injections re-established the coagulum and a permanent cure resulted. The treatment is best adapted to sacculated aneurysms—in fusiform dilatations the slowing of the blood flow is not sufficient to permit of coagulation.

The experiences of Huchard and Catfield are also referred to. They combined this treatment with the internal administration of iodide of potassium.

In the *Medical News* (16th March, 1901) Professor Corner, of New York, reports the results obtained in three cases under his immediate observation, more especially to demonstrate certain objections to the method, and certain difficulties in the way of its administration.

Of the three cases, two received three injections and one seven. In two cases the injections had to be discontinued because of the severe local pain; in the third the pain was only slight. In one case a slight increase in symptoms was noted. One patient died from rupture of the aneurysm whilst under treatment, and the autopsy showed no sign of recent thrombus-formation, although the condition—namely, a large sac with a small communication with the aorta—was favourable for clotting. In the third case a slight improvement was observed.

Professor Corner points out that in two of his cases the injections had to be discontinued on account of the severe pain occasioned, and that the essential rest which is demanded during the carrying out of the course of injections may have something to do with the favourable report given by various observers. On the other hand, he does not condemn the method as useless, but points out the difficulty experienced by himself in persuading his patients to submit to the pain caused by the method.

The *technique* is simplicity itself. The solution is simply injected into the subcutaneous tissues of the thigh or groin, about 200 cubic centimetres being used at each injection. The skin over the area chosen, the syringe, needle, and vessels used, must be carefully purified, and the solution itself must be absolutely sterile. The patient must be kept absolutely quiet after injection. It will thus be seen that the treatment can be carried out by any practitioner, and is probably worthy of trial.—(*Treatment*, June, 1901, p. 298.)

PATHOLOGY.

BY DR. A. R. FERGUSON.

Primary Sarco-carcinoma in Dog.—H. Gideon Wells reports a case of the above occurring in a Skye terrier bitch, about 12 years old. "The animal had been ill for several months with cough and progressive emaciation, a veterinary surgeon, who saw the case, diagnosing it as pulmonary tuberculosis. Previous to this she had been perfectly well."

The thyroid gland was greatly enlarged, as also the neighbouring lymphatic glands. Both lungs were filled with nodules, and a nodule was also found beneath the endocardium of the left ventricle. A few nodules were found under the capsule of each kidney and under the serous membrane of the small intestines.

Subcutaneous implantation in guinea-pig gave a negative result, as also cultures made aerobically and anaerobically.

Microscopically, the thyroid (the primary tumour) presented appearances of alveolar carcinoma *plus* a sarcomatous growth, of angio-sarcoma or perithelioma type, in intimate relation with the more abundant carcinomatous tissue. The metastases in the glands were carcinomatous; in the heart and abdominal viscera they were sarcomatous; in the lungs, while most of the nodules were carcinomatous, some contained both types of growth, as in thyroid. Small areas of cells, similar to those in the sarcoma, were found infiltrating the peribronchial glands.

The author draws the following conclusions, derived from the study of mixed tumours:—

1. Carcinoma and sarcoma may occur simultaneously in the body of an individual as separate growths. This combination is no more frequent than is readily explained by assuming it to be a mere coincidence, and there is no evidence that the presence of carcinoma in any way predisposes the individual to development of sarcoma, or conversely.

2. Sarco-carcinoma, a tumour composed of malignant growth of both types, is even more rare; but three authentic cases can be found, and each of these originated in the thyroid. Metastases were studied in only one, and here were not only some of the secondary growths of mixed type, but pure sarcomatous and pure carcinomatous secondary growths were also found.

3. These facts may be of interest in considering the etiology and biology of malignant neoplasms, but they do not offer a direct explanation of any of the existing problems.—(*Journal of Pathology and Bacteriology*, June, 1901.)—G. H. E.

Cardiac Hypertrophy and Atrophy.—Gutch, from observations on the hypertrophied and normal hearts, concludes as follows:—

1. The increase in the size of the heart is largely due to hypertrophy of the individual muscle fibres.

2. The increase in the breadth of the fibres is not sufficient to account for the whole increase in weight of the heart.

3. But some hypertrophied hearts, especially those of interstitial nephritis, are more difficult to tease out than is the normal muscle. This probably depends on an increase of interstitial tissue, which can also be seen in teased-out specimens.

4. It is possible that along with an increase in breadth there exists an increase in length.

5. These factors are sufficient to account for the whole increase in weight, without supposing any numerical hyperplasia of fibres to take place; while, on the other hand, no direct evidence of such hyperplasia, such as karyomitosis, has ever been brought forward.—(*Journal of Pathology and Bacteriology*, June, 1901.)—G. H. E.

Myositis Ossificans occurring in an Amputation Stump.—Katz reports a case of the above affection occurring in a man, aged 38. The lower third of the right thigh was smashed by a mass of falling masonry, and the part was amputated. Ten days after the operation suppuration set in, and some weeks later, on freely opening up the parts, it was found that necrosis of the femur had occurred; the dead piece of bone, measuring about 8 cm. (3 inches) in length, was resected. By 1st December, three weeks after the second operation, the stump was completely healed; it was absolutely painless (*indolent*) and well covered. Fourteen days later it became tender on pressure, suggesting the occurrence of a neuroma. The pain, at first circumscribed to a spot, soon extended to the whole of the cicatrix; thence it gained the deeper parts of the stump, and by the end of the month it had increased, so that manipulation became unbearable. Gentle palpation demonstrated, at the primary seat of tenderness, a hard bony *plaque*. This increased in size, and finally involved the whole stump. The lower end of the femur was not thickened, but lost itself suddenly in the osseous cap, its exact relations to which could not be determined. The skin was intact, and was freely movable over the mass.

On 20th January, 1901, the new formation was exposed, and found to be a disc of bone lying non-adherent to the skin, and separated from it by a layer of loose tissue about 1 cm. thick. The external surface of the disc was smooth, the deep was rough and firmly attached to the underlying muscles, but not adherent to the end of the femur; a gap of 2 cm. intervened between the bones. The disc weighed 120 gm. Convalescence was uneventful, and patient was discharged from hospital, two months later, with a good stump.

It is possible that the osteoma arose from pieces of periosteum detached at the time of the amputation, and subsequently proliferating in the soft parts. On the other hand, the condition may be analogous to the localised ossifying myositis seen after injuries with rupture of muscle-fibre—*e.g.*, in the adductors of horsemen, in the brachialis anticus after dislocation of the elbow, &c. These osteomatous formations are not adherent to the bone but to the muscle—two characteristics present in the case above reported.—(*Le Progrès Médical*, 17th August, 1901.)—G. H. E.

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- Advice to Women on the Care of the Health Before, During, and After Confinement, with Hints on the Care of the New-born Infant**, by Florence Stacpoole. Third Edition, Revised and Greatly Enlarged. London: Cassell & Co., Limited. 1901. (2s.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 21st SEPTEMBER, 1901.**

	WEEK ENDING			
	Aug. 31.	Sept. 7.	Sept. 14.	Sept. 21.
Mean temperature, . . .	57·1°	53·7°	58·8°	55·2°
Mean range of temperature between day and night, .	24·0°	17·1°	16·7°	13·4°
Number of days on which rain fell, ...	3	2	5	4
Amount of rainfall, . ins.	1·07	0·12	0·62	0·84
Deaths registered, . . .	257	251	262	244
Death-rates, ...	17·5	17·1	17·8	16·6
Zymotic death-rates, . .	3·9	3·1	2·4	2·7
Pulmonary death-rates, .	3·3	3·6	4·6	3·8
DEATHS—				
Under 1 year, ...	71	54	66	60
60 years and upwards, .	45	48	43	41
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	12	6	6	2
Scarlet fever, ...	1	1	2	...
Diphtheria, ...	1	1	3	2
Whooping-cough, . . .	3	7	1	7
Fever, ...	7	4	8	5
Diarrhœa, ...	34	26	15	24
Croup and laryngitis, .	1	..	...	2
Bronchitis, pneumonia, and pleurisy, ...	30	31	41	39
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Diphtheria and membranous croup, ...	7	15	11	9
Erysipelas, ...	22	21	24	20
Scarlet fever, ...	42	71	64	51
Typhus fever, ...	...	1	...	...
Enteric fever, ...	16	30	43	42
Continued fever, . . .	...	...	...	1
Puerperal fever, . . .	2	2	2	3
Measles,*	157	125	139	125

* Measles is not notifiable.

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ORIGINAL ARTICLES.

ON BLOOD-LETTING IN THE TREATMENT OF
DISEASE.¹

By WM. GIBB DUN, M.D., F.F.P.S.G.,
President of the Medico-Chirurgical Society of Glasgow.

GENTLEMEN,—In the first place, I desire to thank you for the honour you have done me in electing me President of this Society. It was an honour quite unsought by me, and when I think of the long line of distinguished predecessors who have filled the chair, I feel how unworthy I am. I trust nevertheless, gentlemen, that I shall have your support, and that the session on which we are entering may be entirely successful.

In thinking of a general topic on which to speak to you, it has occurred to me as somewhat singular that the subject of blood-letting has never once during all the years I have been a member of this Society, so far as I can remember, been before it, or even referred to. It is singular that even from a historical standpoint it should never have been treated, when we consider how universal at one time the practice was, and what importance was attached to it, so that it was regarded as the very "sheet anchor" of the physician's outfit.

¹ Presidential address delivered at a meeting of the Glasgow Medico-Chirurgical Society held on 4th October, 1901.

It only serves, however, to show how completely it has been abandoned. I myself have performed venesection only three times, and that, I suppose, is just three times oftener than most of the members of this Society. I remember on one occasion recommending blood-letting in a case of uræmic coma to a hospital physician of many years' standing, who assured me that he had never bled. It seems to me, therefore, that it may be interesting, and not unprofitable, were I to take a brief glance at the history of blood-letting, and to consider shortly what are the conditions in which it might still be practised.

From time to time one observes indications of a tendency to a return to blood-letting, and I notice that at the last meeting of the British Medical Association the President, in his address, said, "There can be no doubt that treatment by bleeding was formerly sadly overdone, but the pendulum has now swung too far in the opposite direction, and I cannot doubt that lives are now lost for the want of it. I have myself seen," he says, "desperate cases of pulmonary obstruction in which I have advised it, but friends objected, and not one of these cases was saved by its omission."

GALEN (130–200 A.D.)

Blood-letting is one of the most ancient methods of practice. It is said to have been first resorted to among the Greeks in the Trojan war. Mention is made of it in the Hippocratic writings. I do not intend to refer to them, but begin with Galen, who practised in Rome during the latter half of the second century, at a time when blood-letting, under the influence of the teaching of Erasistratus, who had been dead four hundred years, had quite gone out of fashion. Galen practised and defended it, and as he was "a fellow of most infinite jest, of most excellent fancy," his narrative of his contentions with his brother practitioners, and his description of his cases, make most interesting reading. Take the following case as an instance of his style and treatment:—

"I was once asked by a certain rich man, who lived in the suburbs of Rome, to come and see his butler, who was in danger of losing his sight, so he said; certainly he had been suffering much pain for the last twenty days. Moreover, the physician who was appointed to look after the rich man's household belonged to the sect of Erasistrateans, and had a great abhorrence of venesection. When, therefore, I knew, having seen the patient, that he was a 'full-blooded' young

man, and that his eyes were not yet ulcerated, but that there was much inflammation and discharge, that the eyelids were much thickened, and that in one there were even granulations, causing dimness of sight, and more and more pain, and all increased by the inflammation and discharge; having seen all this, and learning the whole line of treatment which the doctor had employed, I said that I could not, of course, be constantly coming to the suburb, and that it was necessary, for at least three days, to see the man at short intervals. 'Certainly,' he said, 'you may, and I will be grateful; take the man with you to your own house in town.'

"He came about the fifth hour, and forthwith, at the first bleeding, I withdrew three pounds of blood, and made another bleeding again at the ninth hour. Having recovered wonderfully from this, the following day a certain kind of soft ointment was used, to which was added that amount of wine which we are accustomed to add in such a case. The ointment was applied under the eyelids by the point of a probe, which carried it to the highest parts. I did this first in the morning, then at the third hour, and again at the ninth. After which innuncions, he was at sunset led to the bath at evening. On the following day he went out in the morning to meet the rich man, and at the place where they are accustomed to descend from their carriages, he saluted him, with eyes open and free from all inflammation and discharge, the same man who, two days before, had not been able to see on account of the discharge and pain. Thus the matter appeared like magic, so that, wondering at the rapidity of the cure, all others burst out with exclamations of praise, although really we had done nothing great, unless it were in comparison with the other doctor, who had perpetrated the greatest mischief on account of his dread of bleeding. . . .

"The rich man having enquired into the matter—whether or not it had been a case of magic—and having ascertained the whole thing, from that time forth called the Erasistratean physician a *αἱμοφάγος*—a *blood-funker*."—(Kühn, tom. xi, p. 299.)¹

I should like to interpolate here an incidental remark made by Alison, in Edinburgh, in 1856, with regard to blood-letting in eye affections. The parallel between the treatment of the two men, separated from one another by so many hundreds of years, is curious. He says, "The cases of inflammation of the conjunctiva which I have seen, which have been most

¹ "Galen: Two Bibliographical Demonstrations," James Finlayson, M.D., Glasgow, 1895.

satisfactorily treated, have been where the patient has been previously healthy, and his fever was high, and which have been trusted to full and repeated general blood-letting; comparing these cases with others even of less intense inflammation of that kind, where the remedy has not been used, or carried to a small extent, I could not doubt that in a very few days, but for the bleeding, sloughing of the cornea and irremediable blindness would have resulted." Strange! is it not? that to-day in our eye infirmaries, where venesection is as seldom performed as in our general hospitals, cases of severe conjunctivitis are "most satisfactorily" treated without blood-letting.

In his admirable paper on "The Blood-letting Question in Olden Times,"¹ Chambers thus summarises Galen's rules for the guidance of the practitioner:—

1. "That you are not to treat the disease, but the man; that you are to judge of the propriety, the amount, and necessity of repetition of blood-letting, by the individual symptoms exhibited in each case, and not by the nomenclature.

2. "That you are to observe, also, the natural constitution of the patient, *e.g.*, the extremes of life, youth and old age, cause blood-letting to be badly borne. Certain races, such as the soft-fleshed Celtic nations, do not stand it.

3. "That you also take note of epidemic influences, *e.g.*, not to bleed much in dog-days (in Italy); and in moist, warm weather, when, of course, septic poisons are most rife.

4. "That you are not to mistake physiological changes for morbid; such, for example, as the fulness of the pulse which accompanies the first stage of digestion, for permanent fulness.

5. "That you are to take blood-vessels which communicate directly with the chief seat of inflammation.

6. "That often, in spite of apparent or real general debility, it is desirable to take blood; since the benefit of the locally affected part, and the consequent benefit to the system, compensates for the depletion."

Judicious rules, which had they been followed, might have gone far to prevent the excesses to which blood-letting was subsequently carried.

SYDENHAM (1624–1689).

It is a long step from Galen to Sydenham—the "Father of English Medicine." "*Medicus in omne ævum nobilis*," as the inscription on his tombstone reads—in our own tongue, "A

¹ *British and Foreign Medico-Chirurgical Review*, vol. xxii, 1858.

physician famous for all time." His early experiences as a soldier no doubt affected his manner as a physician. He was essentially a man of action, and was not hampered by precedent or tradition. He nevertheless adopted the traditional practice of blood-letting, but he did so within certain limitations, and never, I think, carried it to the extremes of later times.

In his *Medical Observations*, Sydenham lays down certain fundamental principles for guidance in treatment. So far as these refer to blood-letting they are briefly as follows:—

1. "Whenever I have to deal with a patient whose blood is in itself of a weak character (as it is for the most part with children), or deficient in animal spirits (as it is with men in the decline of life, and youths that have long been invalids), I keep my fingers from the lancet.

2. "Whenever, on the other hand, the state of the blood is of a different description (such as I find it amongst youths of an athletic habit and a sanguine temperament), venesection is my leading remedy.

3. "As to quantity, it is my practice to take away just as much blood as I consider will relieve the patient."

He bled in the treatment of almost every complaint—plague, dysentery, rheumatism, erysipelas. For quinsy, he says, "I bleed freely from the arm, and also from each side of the tongue." In the treatment of pleurisy, he tells us, "My sheet-anchor is venesection." He bled in this complaint to 10 oz. or more as soon as he was sent for, the same the next day, and the same again on the third day. "I even go on," he says, "to the fourth, so that, unless the patient previously recover, he has, in cases where the pain and other symptoms are very violent, four continuous bleedings: . . . in boys, however, one or two bleedings have generally been enough." In the treatment of gout he was opposed to bleeding, as is shown in a characteristic letter to Major Hale, in which he informs him that he is suffering from what "in men we call Hyperchondriacall; in women, Hystericall," and grimly comforts him by telling him, "I could heartily wish, instead of a merry Christmas, that you might have a smart fit of the Gout, which would quickly dissipate your other fears, and those symptoms which, if I mistake not, doe naturally desire and discharge upon the Articles, and therefore amongst all tamperings that you may be put upon at any time, I doe advize you to beware of bleeding or Purging, as diverting this bitter, but most effectual remedy, viz., the Gout."¹

¹ *Thos. Sydenham*, by Jos. Frank Payne, M.D., London, 1900.

Although so careful to advise against bleeding in childhood, still, in measles, a disease then and afterwards much dreaded, he made use of it. "If life be endangered," he says, "from the violence of a fever, from difficulty of breathing, or from any other symptom of a peripneumony, I take blood from the arm, and I do it with remarkable success. The bleeding is proportionate to the age; but it can be applied even to infants. At times I have even repeated it. Under Divine Providence, I have saved many infants in this way, and I know of no other." This, probably, we would still recognise as quite proper treatment, the lungs having become clogged, and the right chambers of the heart distended and almost paralysed. Bleeding in measles was evidently with him an exceptional occurrence, however, for, speaking of the very sensible treatment which he recommends, he says, "He that uses this remedy"—meaning the course of treatment he has just described—"rarely dies."

A distinguished contemporary of Sydenham was Rupert, Prince Palatine, nephew of King Charles I, and although not a physician, yet from the fact of his determined opposition to the then prevalent practice of bleeding, I should like to refer to him. That he was not alone in his aversion to bleeding is certain, for on several occasions Sydenham makes reference to reluctant submission to it on the part of patients or friends. The authoress of the *Life of Rupert* says, "The Palatines had ideas of their own upon the subject of medicine, a profound distrust of doctors, and a very reasonable aversion to the practice of bleeding. 'Pray God she fall not into the Frenchified physicians' hands, and so let blood and die,' wrote Rupert of a fair friend." He himself died in 1682, and up to the last maintained his aversion to bleeding. It was said that the horror of being bled led him to conceal the true cause of his suffering until it was too late to remedy it. "Yesterday Prince Rupert died," says a letter dated 30th November. "He was not ill above four or five days; an old hurt in his leg, which had been some time healed up, broke out again, and put him into an intermitting fever. But he had a pleurisy withal upon him, which he concealed, because he would not let blood until it was too late."

I do not suppose that Sydenham and Rupert ever met, except it might be on the battlefield. Had Sydenham seen Rupert in his last illness, it is very unlikely he would have bled him even had the patient been willing, for Rupert's constitution was shattered by his arduous labours as a general, and as an admiral of the fleet.

His cousin, King Charles II, did not escape the use of the lancet, and, if I am not detaining you too long, I would like to relate the account of his last illness. It presents a most vivid picture of medical practice of that time.

"Scarcely," writes Macaulay, "had Charles risen from his bed (2nd February, 1685) when his attendants perceived that his utterance was indistinct, and that his thoughts seemed to be wandering. Several men of rank, as usual, assembled to see their sovereign shaved and dressed. He made an effort to converse with them in his usual gay style, but his ghastly look surprised and alarmed them. Soon his face grew black; his eyes turned in his head; he uttered a cry, staggered, and fell into the arms of one of his lords. A physician who had charge of the royal retorts and crucibles happened to be present. He had no lancet, but he opened a vein with a penknife. The blood flowed freely, but the king was still insensible. He was laid on his bed, and all the medical men of note were summoned. Several of the prescriptions have been preserved. One of them is signed by fourteen doctors. The patient was bled largely. Hot iron was applied to his head. A loathsome volatile salt, extracted from human skulls, was forced into his mouth. He recovered his senses, but he was evidently in a situation of extreme danger.

"On the morning of Thursday, the fifth of February, the *London Gazette* announced that His Majesty was going on well, and was thought by the physicians to be out of danger. But in the evening it was known that a relapse had taken place, and that the medical attendants had given up all hope. The king was in great pain, and complained he felt as if a fire was burning within him. Before ten next morning his senses were gone. At noon on Friday, the sixth day of February, he passed away without a struggle."

Sydenham does not seem to have been one of the many physicians in attendance on the king. No doubt because of his Parliamentary antecedents he was not a *persona grata* at Court, but in the list of attending physicians are the names of two of his friends, viz., Dr. Millington, President of the College of Physicians, and Dr. Brady, Professor of Medicine at Cambridge.

CULLEN (1710-1790)—GREGORY (1753-1821).

From the death of Sydenham till the time of Cullen, who began to teach clinical medicine in the Royal Infirmary of Edinburgh in 1757, blood-letting reigned supreme. Under

Cullen and his distinguished colleague Gregory, phlebotomy may be said to have reached its zenith in this country.

Cullen considered "blood-letting one of the most powerful means of diminishing the activity of the whole body, especially of the sanguiferous system, and the most effectual means of moderating the violence of reaction in fevers."

In the treatment of pneumonia, which afterwards became the field on which the question of blood-letting was finally fought out, he displays his vigour as a phlebotomist. "The remedy chiefly to be depended upon," he writes, "is that of bleeding at the arm, which will be performed with most advantage in the arm of the side affected, but may be done in either arm. The quantity must be suited to the violence of the disease, and to the vigour of the patient, and generally ought to be as large as this last circumstance will allow. If symptoms of relief do not appear, the bleeding should be continued till the symptoms of a beginning syncope come on. It is seldom that one bleeding, however large, will prove a cure of this disease. Any quantity above twenty ounces is a large, and any quantity below twelve a small, bleeding. A quantity of from four to five pounds, in the course of two or three days, is generally as much as patients will safely bear; but if the intervals between the bleedings, and the whole of the time during which the bleedings have been employed, have been long, the quantity taken, upon the whole, may be greater. When a large quantity of blood has been already taken from the arm, and when it is doubtful if more can with safety be drawn in that manner, some blood may still be taken by cupping and scarifying." This is not a continuous extract, but is culled from different pages of Cullen's *First Lines*, and gives a fair idea of his general views on blood-letting.

The influence of Galen on Cullen is seen, among other things, in the direction he gives to take blood at the arm of the affected side, Galen's rule being, as you will remember, to select blood-vessels which communicate directly with the chief seat of inflammation.

Cullen bled for almost every disease, and more than once, in describing treatment, he says, "the cure of this proceeds upon the general plan, by bleeding." In measles his treatment was by no means so judicious as Sydenham's, for he began at once with bleeding, and, then, when desquamation was finished, in order to obviate and remove the inflammatory state of the system which had been induced by the disease, he advised to bleed again.

Cullen's opinions, no doubt, long influenced medical practice,

for he was a great man, and a most successful and impressive teacher. I cannot leave him without noticing his connection, indirect though it was, with the *Faculty* in whose hall we meet to-night. His first lessons in medicine he had from a member of the Faculty of Physicians and Surgeons, Mr. John Paisley, who "was long 'bibliothecarius' to the Faculty." Thomson states in his life of Cullen that he was engaged in extensive practice, was of a studious turn of mind, and had collected a large and valuable library. When his old pupil-apprentice, Cullen, began as a lecturer on medicine, Mr. Paisley's library was thrown open to his students.¹

At this point, perhaps, I ought to make reference to the celebrated Dr. John Brown, a pupil of Cullen, to whom at one period he acted as Latin secretary, and with whom he afterwards quarrelled in the most violent manner. Brown was author of the system known as the "Brunonian," which had a widespread vogue both in Great Britain and on the Continent, several volumes treating of it having been published in Germany. It consisted simply in the administration of a course of stimulants, instead of the so-called antiphlogistic remedies, amongst them, of course, blood-letting. The following prescription of Brown's is one of the most extraordinary in the whole range of medicine. It was written in reference to a hypochondriac patient, about whose case he was consulted:—"For breakfast, toast and rich soup made on a slow fire, a walk before breakfast, and a good deal after it; a glass of wine in the forenoon, *from time to time*; good broth or soup to dinner, with meat of any kind he likes, but always the most nourishing; several glasses of port or punch to be taken after dinner, till some enlivening effect is perceived from them, and a dram (whisky?) after everything heavy; one hour-and-half after dinner, another walk; between tea time and supper, a game with cheerful company at cards or any other play, never too long prolonged; a little light reading; jocose, humorous company, avoiding that of popular Presbyterian ministers and their admirers, and all hypocrites and thieves of every description. . . . Lastly, the company of amiable, handsome, and delightful young women, and an enlivening glass."²

Brown had studied for the Presbyterian Church, hence, no doubt, his sarcastic reference to Presbyterian ministers. He

¹ *Memorials of the Faculty of Physicians and Surgeons of Glasgow*, Alex. Duncan, LL.D., Glasgow, 1896.

² *The History and Heroes of the Art of Medicine*, Russell, London, 1861, p. 351.

evidently acted upon his own prescription, for when lecturing he had a bottle of whisky beside him, of which he seldom took less than three or four doses during the course of the lecture.

No doubt Brown's theory contained the germ of much that was good, but he pushed it, as the foregoing prescription demonstrates, to an extreme, so that it soon passed into complete abeyance, while blood-letting continued its course unchecked.

Gregory, Cullen's colleague in the University of Edinburgh, relates a case which shows the extraordinary lengths to which bleeding was carried in those days, and likewise the genuine belief which physicians entertained of its value :—¹

"A young man came under my care in the clinical ward, who had been ill of a pleurisy several days. The symptoms were so uncommonly violent that there was no doubt about the nature of the disease, the urgent danger of it, and the only remedy—namely, large bleeding—that could give the patient a chance of his life. The youngest of my pupils must have known all these things just as well as I did. The remedy certainly was not spared: my man underwent three large bleedings within twenty-four hours, but without the least benefit; indeed, he evidently grew worse, and, after the third bleeding, my clerk came to tell me he seemed to be dying. This was no surprise to me, who had been aware of his great danger from the moment I saw him; but as I was not disposed to give him up without using every effort to save him, I went immediately to the hospital, and finding his strength still entire, though the symptoms of his disease were dreadfully urgent, I instantly ordered another bleeding for him, and staid to see it performed, and to observe the effect of it. It was the largest I ever witnessed, and much larger than any bleeding I ever prescribed. I expected and wished to have made him faint by that bleeding, for such fainting, I am confident, often does good; but this, like every other point in physic, has been the subject of keen and endless disputes. He bore the loss of thirty-two ounces (a full English quart) of blood *without fainting*; and I durst go no further. Next day I found him worse than ever, but still, as I thought, able to bear another bleeding; which I conceived might give him some chance, though but a small one, for life. It was tried without delay, and I staid to observe the effect of it. To ensure, as I thought, his fainting, I made him sit erect when he was bled; and in *that posture* he bore the loss of more than *twenty ounces* of

¹ *Edinburgh Medical Journal*, 1857, vol. ii, p. 978.

blood—making in all ninety-seven ounces that were taken from him in three successive days, but within forty-eight hours. At that time he was seized with hiccup, and I could observe severe spasms in his face; so that it might be said, and, in fact, was said, without exaggeration, that I had bled him into convulsions. One or two of my pupils, who were very attentive to all that passed, took fright, and ran out of the room, believing all was over, and that the man was instantly to die in my hands; and I confess that I had my own share of uneasiness for some minutes, though I was not so disconcerted as my pupils were. On laying the man down on his bed the spasms went off, as soon as and as easily as a fainting fit commonly does; and from that moment he *was* in a manner cured; the violent symptoms of his disease *instantly* ceased, and, without the help of any other remedy, he recovered as well as any patient I ever saw in that disease, and *much faster* than such patients commonly do."

After reading this one feels almost inclined to agree with Le Sage's Sangrado, "C'est un erreur de penser que le sang soit nécessaire à la conservation de la vie; on ne peut trop saigner un malade."

A good story is told of the father of this thorough-going phlebotomist, Professor John Gregory, which may account for the son's love of the lancet. "Dr. Gregory fell in love with the Hon. Elizabeth Forbes, a daughter of William, Lord Forbes. She was a beautiful girl, very clever, and she was, besides, an heiress. There is a story that her father did not at all approve of the marriage. 'What do you propose to keep her on?' said he, and Gregory, getting angry, took his lancet out of his pocket, and said, 'On this.' They were married in 1752."¹ He used his lancet on that occasion, at least, to some purpose.

CONTINENTAL BLOOD-LETTING.

On the Continent at this time bleeding was being actively practised. Bouillaud's plan may be called "thorough;" he spoke of it as "*coup sur coup*." This was his "formule." "Bleed in the morning of the *first day* to sixteen ounces. In the interval cup to the same amount, or apply thirty leeches. On the *second day* bleed again, and if the pain still continues, cup or leech. The disease, fortunately, for the most part yields on the *third day*. If otherwise, don't hesitate, but

¹ *The Academic Gregories*, Edinburgh, 1901. A most interesting little book by Agnes Grainger Stewart, daughter of the late Sir Thomas Grainger Stewart.

bleed again. If by a rare chance it should resist to the *fourth day*, bleed again; but usually it is better to apply a large blister. As a rule, you must not give up bleeding until fever, pain, and dyspnœa have almost ceased" (*Traité de Nosographie*, tom. ii, p. 503).¹

In Italy, Rasori carried bleeding to an extent greater than any of the French physicians. One case is recorded in which a young man of 19 years was bled seventeen times, to about 222 oz., took nearly 1½ oz. of tartar emetic, and 2 drachms of Kermes mineral. Wonderful to relate, he recovered—"très bien guéri" (*Archives Générales de Médecine*, tom. iv).²

MARSHALL HALL (1830).

Marshall Hall's work on *The Morbid and Curative Effects of the Loss of Blood* appeared in 1830, and in it he describes very graphically the practice of his time. He narrates many cases in which there is no doubt whatever that excessive bleeding was the cause of death. In reading some of his cases, involuntarily the word "dreadful" escapes from one's lips.

Let me summarise the case of a member of our own profession who, in 1821, was thrown from his horse, fracturing the third and fourth ribs of the left side. *Post-mortem* it was seen that the pleura was not wounded, but only morbidly red in the vicinity of the fracture. The case ought to have done well, and there can be no doubt excessive bleeding was the cause of death. During four days he lost 120 oz. of blood. On two occasions he bled himself, the first time to syncope, and, as a large wash-hand basin was used to receive the blood, its quantity was not known, but must have been very considerable. The second auto-bleeding was to 16 oz. In spite of great exhaustion, and of symptoms which alarmed Hall, his medical attendants proposed further bleeding, but the patient rapidly got worse, and died on the tenth day.

Here is another case, which I also summarise:—

A lady, who was of pale and sallow complexion and weakly constitution, was within six days of her confinement of her first child, when she awoke in the night with severe pain of the head, confined to one spot. No diagnosis seems to have been made, but she was relieved by being bled to 16 oz., followed by purgative medicine. On the second day after her confinement the pain returned, when she was again bled to 16 oz., and leeches applied to the temples. Three hours later

¹ *British and Foreign Medico-Chirurgical Review*, vol. xxii, p. 5.

² *British and Foreign Medico-Chirurgical Review*, vol. xxii, p. 9.

6 or 8 oz. were taken; faintishness was induced, and the symptoms abated. Next day, the symptoms remaining as before, the purgative medicine was repeated, and a blister applied. The following day she felt better, but, poor lady! she dreaded the idea of being bled, from the faintishness she had experienced from it, and said it would certainly kill her. On the next day, nevertheless, 16 oz. of blood were again taken from the arm, and again, on the following day, four teacupfuls. The most dreadful fainting followed, with gasping, open mouth, a convulsive action of the diaphragm, and in an hour or two death closed the scene.

As showing the infatuation and blindness of the profession regarding this treatment, sanctified by the tradition of ages, I would remark that Marshall Hall expresses no horror of such scenes, nor utters any protest against such barbarous practice.

The attitude in which the patient was placed when being bled was regarded as important. It was recommended that he should sit in the erect posture, even when he was so weak as to require to be supported, and frequently was bled *ad deliquium*. In this posture fainting took place usually much sooner than in the recumbent, where, if the flow of blood was slow, and fainting long of ensuing, or not at all, the quantity of blood lost might be so great that convulsions came on, as in Gregory's case. Marshall Hall was well aware of this, and plainly advised the erect posture, and warned against the danger of the recumbent.

POPULAR APPRECIATION OF BLOOD-LETTING.

The public evidently, in the main, were strong believers in blood-letting, so that, doubtless, it often required no little boldness on the part of the practitioner to abstain from the use of the lancet.

I have read somewhere of an instance in which a surgeon was threatened with an action of damages for malpractice, because he had not bled a patient who had had an apoplectic seizure.

The following quotation from Ogle¹ is a striking example of the popular appreciation of phlebotomy during the first half of last century. It refers to certain Whitworth doctors:—

“On a Sunday morning the doctors used to bleed gratis. The patients, often to the number of a hundred, were seated

¹ *The Harveian Oration, 1880, London, 1881, p. 202.*

on benches round a room, where troughs were placed to receive the blood. One of the doctors then went and tied up the arm of each patient, and was immediately followed by the others who opened the vein. Such a scene is easier conceived than described." In justice to the profession, it ought to be stated that the *doctors* were irregular practitioners.

The most exalted personage who practised phlebotomy of whom I have read was the French king, Louis Philippe, who, when Duke d'Orléans, travelled in 1797, as an exile, in the United States of America. There, with true republican simplicity, he was known as plain "Mr. Orléans." He was accompanied in his travels by his brothers, Count Montpensier and Count Beaujolais. It is related that on one occasion "Mr. Orléans, having fallen from his horse, and feeling unwell, bled himself, with such good results that he was asked to operate on an old chief, who improved so rapidly that the greatest honour the tribe could confer was voted to the paleface, one never offered to a white man before, nor could it be declined without giving mortal offence—Mr. Orléans must sleep that night in the family wigwam of the chief; more than that, upon the family mat, and in the place of highest honour—between the grandmother and the grandaunt, the most venerable of the squaws. That made rare fun for Montpensier and Beaujolais, and Orléans wished that his surgery had turned out differently."

Another time, on the same journey, the brothers were thrown out of a wagon. "Orléans lay insensible for some time. When consciousness returned, he bled himself so successfully that the onlookers thought him a physician going West to locate, and begged him to settle in Carlisle, where a good doctor was needed. 'Perhaps,' he used to say, 'I should have been happier there than as King of France.'"¹

An old Glasgow physician, now deceased, told me that he remembered when persons in good health used to come in great numbers to the Dispensary of the Royal Infirmary to have their annual spring bleeding.

HUGHES BENNETT, AND THE EDINBURGH AND GLASGOW SCHOOLS OF MEDICINE (1856-57).

Twenty years after Marshall Hall's time general blood-letting had greatly declined. Those who had employed it formerly, particularly in the treatment of pneumonia, asserted as the reason for their altered practice that a change had taken place

¹ *Century Magazine*, September 1901, pp. 752, 756.

in the type of the disease; that, whereas formerly the sthenic type prevailed, now it was the asthenic, in which blood-letting was no longer admissible.

One can hardly help thinking that the change was not in the type of the disease, but in the physicians, and that the theory was little more than an excuse, unconscious we acknowledge, to justify their former practice, and to account for their late abandonment of it.

One of the most vigorous objectors to blood-letting in pneumonia at that time was Professor Hughes Bennett. The leader of those who advocated it, but had largely ceased to use it, was Dr. Alison, Professor of Medicine in the University of Edinburgh. A keen controversy took place on the subject in 1856-57, and amongst others who shared in it was our friend and teacher, Sir William T. Gairdner, then Physician to the Edinburgh Royal Infirmary.

Hughes Bennett denied that there was any change in the type of pneumonia, and based his opposition to blood-letting on a comparison of the results obtained by those who favoured bleeding, with his own results without bleeding. Recent advances in physical diagnosis and pathology strengthened him also in the line of treatment he had adopted. I quote his own comparative summary:—¹

“So far, I think, I approach very near correctness by saying that the results of a vigorous antiphlogistic treatment of pneumonia, as formerly practised, is a mortality of 1 in 3 cases; that the result of a treatment by tartar emetic in large doses, according to Rasori, and more recently to Dietl, is a mortality of 1 in 5 cases; the result of moderate bleedings, as in the treatment of Grisolle, is a mortality of 1 in 6½ cases; and that the result of a dietetic treatment, with occasional bleedings and emetics in severe cases, as with Skoda, is a mortality of 1 in 7, and if pure, as under Dietl, a mortality of 1 in 13 cases, all carried on in large public hospitals. Further, that the mortality from pneumonia in the army and navy, occurring generally among healthy, able-bodied men, is also a mortality of 1 in 13 cases. Lastly, that the results of a treatment directed to further the natural progress of the disease, as I have explained it, is, in the clinical wards of the Royal Infirmary of Edinburgh, when under my care, up to this time, a mortality of 1 in 21½ cases.”

Hughes Bennett was no bigotted opponent of blood-letting, for he admits “at the same time there are cases, which were formerly often mistaken for inflammation, in which blood-

¹ *Edinburgh Medical Journal*, 1857, vol. ii, p. 794.

on benches round a room, where troughs were receive the blood. One of the doctors then went the arm of each patient, and was immediately followed by others who opened the vein. Such a scene is easier than described." In justice to the profession, it is stated that the *doctors* were irregular practitioners.

The most exalted personage who practised of whom I have read was the French king, Louis who, when Duke d'Orléans, travelled in 1797, in the United States of America. There, with true simplicity, he was known as plain "Mr. Orléans," accompanied in his travels by his brothers, Comte de Montpensier and Count Beaujolais. It is related on occasion "Mr. Orléans, having fallen from his horse, feeling unwell, bled himself, with such good effect, he was asked to operate on an old chief, who was so rapidly that the greatest honour the tribe could be voted to the paleface, one never offered to a man before, nor could it be declined without giving offence—Mr. Orléans must sleep that night in the wigwam of the chief; more than that, upon the morrow and in the place of highest honour—between the grandfather and the grandaunt, the most venerable of the square made rare fun for Montpensier and Beaujolais, and wished that his surgery had turned out differently."

Another time, on the same journey, the brother was thrown out of a wagon. "Orléans lay insensible some time. When consciousness returned, he bled himself successfully that the onlookers thought him a good doctor. When going West to locate, and begged him to settle in a place where a good doctor was needed. 'Perhaps,' he used to say, 'I should have been happier there than as King of France.'

An old Glasgow physician, now deceased, told me that he remembered when persons in good health used to come in great numbers to the Dispensary of the Royal Infirmary to have their annual spring bleeding.

HUGHES BENNETT, AND THE EDINBURGH AND GLASGOW SCHOOLS OF MEDICINE (1856-57).

Twenty years after Marshall Hall's time general bleeding had greatly declined. Those who had employed it particularly in the treatment of pneumonia, were the only reason for their altered practice that a change had taken place.

¹ *Century Magazine*, September 1901.

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letting may still be useful. I allude to those where an obstruction to the circulation exists in the heart and lung, dependent on an over-distention of the right side of the former organ, and cases of venous congestion, engorgement, and, perhaps, cedema of the latter; also, certain cases of bronchitis preventing aëration, of aneurisms, and of asphyxia."

The Glasgow School was represented in this controversy by Dr. Joseph Bell, who contributed a very able paper, read before this Society, and afterwards published in the *Glasgow Medical Journal*.¹ He had been Physician to the Glasgow Royal Infirmary, and, therefore, had had opportunities of seeing and studying disease on the large scale. He was a very able man, but, unfortunately, was cut off at the early age of forty-six. He strongly supported Alison, and was, therefore, a professed believer in the change of type in pneumonia. He practised blood-letting in this disease, but in an eminently careful manner, reserving it for the more extensive, recent, and sthenic cases, and abstracting only comparatively small quantities of blood, generally either by cupping or leeching; in the asthenic cases he used mercury, stimulants, and tonics, and refrained from blood-letting. His results were most satisfactory, and I question if they can be equalled by those of the hospital physicians of to-day.

I shall offer no criticism of Dr. Bell's views, as this paper is rather historical than critical. It would afford this Society, I am sure, much satisfaction if, during the course of this session, one of our hospital physicians would prepare a paper giving us the results of his treatment of pneumonia, a disease which falls so often to the general practitioner to treat.

I should like to quote Dr. Bell's closing remarks, which are as follows:—

"I must add that it becomes painful to contemplate the disastrous effects which may result from the inculcation of his (Dr. Hughes Bennett's) new notions on the minds of students, especially when proceeding from the Chair of Clinical Medicine. Weak and uninfluential as my protest may be, I do most strenuously oppose it against such erroneous dogmas, from whatever quarter they may emanate. I make bold to tell their authors that they may live to discover that the opprobrious epithets, which they so liberally bestow on bleeding, &c., lie concealed in the folds of the banner of expectancy, which they are unfurling to the gaze of their astonished students. In all probability, a large number of these young men will commence the practice of their profession in country

¹ 1857, vol. v, p. 180.

districts. Is it not painful to think of the results that must ensue, if unfortunately they adopt such views in the management of acute inflammation? Fancy an attack of acute and extensive pneumonia, occurring either in a strong young farmer, a village blacksmith, or a country gentleman, attempted to be cured by a few grains of some saline or a few drops of nitric æther! How the 'grim tyrant' will chuckle in derision at the physician, as he stands by inactively watching for the 'period of crisis by sweat and stool'!" Comment is unnecessary.

MECHANICAL THEORY OF BLOOD-LETTING.

On what principle do we practise venesection to-day? What may be termed correctly enough the mechanical theory of blood-letting seems to me to answer the question. I cannot put it more clearly than in the words of Sir Thomas Watson:—¹

"The condition which cries out for and obtains relief so signal and immediate from phlebotomy, may be described as that of great, and often sudden engorgement and distension of the vessels that carry black blood—of the systemic veins, of the pulmonary artery, and especially of the right chambers of the heart. In this embarrassed condition of the circulation, with so unequal a distribution of blood in the two systems of vessels, it is the veins that require emptying, not the arteries. As the tension of the stretched and almost paralysed right ventricle is lessened, the hollow muscle again becomes capable of contracting and propelling its contents, the clogged lung is set free, the functions of the oppressed brain are eased and retrieved, and the balanced play of the heart and lungs is restored."

In one of the cases in which I bled, the patient was suffering from acute bronchitis. There was most distressing dyspnoea, the patient tossing about in agony. The face was much congested, and evidently the right side of the heart was greatly embarrassed. The withdrawal of a small quantity of blood by venesection gave the utmost relief to the urgent dyspnoea, and convinced me as to the propriety of bleeding in such cases.

You will pardon me if I quote a case reported in 1883 by Dr. John Wyllie, of Stewarton.² The report is most graphic, and illustrates better than anything I can say the benefits of

¹ *Lectures on Physic*, London, 1871, vol. i, p. 254.

² *Glasgow Medical Journal*, 1883, p. 256.

judicious blood-letting, and is in strong contrast to cases already quoted.

"I shall never forget my first experience of blood-letting; the circumstances are so indelibly fixed in my memory that, although six years have elapsed, I could almost relate them without referring to my notes. M. M., a strong, healthy young man, the son of a farmer, had been suffering for three days from a severe attack of capillary bronchitis. I had prescribed the usual remedies—expectorants and emetics, with poultices and turpentine stupes externally, but the symptoms continued to grow more unfavourable, and at last assumed such an alarming aspect that the patient seemed not likely to live many hours. His breathing was 65 per minute; pulse 130, small and feeble. His face had a peculiar bluish, bloated, anxious appearance, and his body and extremities were mottled with blackish, smoky-coloured spots, and covered at the same time with a cold, clammy perspiration.

"His father, an old man leaning on his staff, stood by the bedside, and with tears trickling down his cheeks implored me to bleed him. Although I had then been a graduate for four years, and had spent two years in an English hospital, and two years in a large city practice, I had to confess that I had never seen the operation performed. However, I thought it might relieve the pressure on the right side of the heart and give at least a little temporary relief, so, with the old man's assistance, I bared the arm and opened the vein. The blood at first came with great difficulty, being thick and black, almost like tar; but in a short time it flowed more freely and he became less livid. As the blood flowed the patient seemed to rally, his appearance became more natural, his breathing much calmer, his pulse steadier, and when about fifteen ounces had been withdrawn, he expressed himself as feeling almost well. Twenty minutes after, his breathing was 34 per minute; pulse, 98; and the anxious, oppressed look had given place to a pleasant smile. The relief continued for twenty-four hours, but at the end of that time he again became oppressed, and when thirty-six hours had passed the old symptoms had returned to such an extent that I resolved to bleed him again without delay. By the time twelve ounces had been withdrawn, he declared that he found himself much better. He continued henceforth steadily to improve, the bad symptoms were never manifested again, and within a week he was able to move freely about his room."

I should like to have quoted one or two cases more—of pneumonia and valvular cardiac disease—in which venesection

was wisely used, and with most excellent results, as related by Markham in his *Gulstonian Lectures on Blood-Letting*, but refrain. This little work is most instructive, and will well repay a reading.

Venesection is recommended in uræmic coma, and I have used it in this condition myself with a happy result. Here the idea is not that of the relief of mechanical obstruction, but that with the blood a certain amount of poison is thrown out, while at the same time an osmotic flow takes place from the tissues to the blood, preventing an accumulation of toxins in them. Roberts points out that a distinction ought to be drawn between acute and chronic Bright's disease. In the latter the blood is impoverished and watery, and the withdrawal of it, while it gives present relief in a uræmic seizure, may predispose to another attack; besides, in the chronic form patients frequently recover from repeated uræmic paroxysms without the aid of venesection. In the probably similar condition of puerperal eclampsia, blood-letting is sometimes also had resort to.

LOCAL BLOOD-LETTING.

I would like to say a few words regarding local blood-letting by means of cupping or leeching.

The advantages of cupping are that it is quickly over, and the quantity taken is more accurately determinable than with the use of leeches. There is the danger, however, of burning the patient, and the operation requires a certain degree of skill. At one time in the Royal Infirmary of Glasgow there was an official "cupper," and up till recently, if it be not the case still, his name appeared on the list of office-bearers of that institution. I feel certain that were he called upon now to do duty he would feel very much embarrassed indeed.

I have employed wet cupping in œdema of the bases of the lungs, but cannot say with advantage. I can well remember the first time I witnessed dry cupping. I was living in a small German town, where I afterwards was joined by a dear friend, the late Dr. Moyes, of Largs. He was seized with an attack of asthma, and was so very ill that he thought he was dying. The doctor who was called in sent one of the sisters from the *Kloster* to cup him down the spine. From her I received my first lesson in cupping, and I have often repeated it to students exactly as I myself witnessed it at the hands of the good sister. In this connection it is very interesting to note that the celebrated Harvey, the discoverer

of the circulation of the blood, himself employed cupping in the treatment of asthma. He says:—"And I have found by experience that patients affected with Asthma might be brought out of states of very imminent danger by having cupping-glasses applied, and a plentiful and sudden affusion of cold water (upon the chest)."¹ I like to think that the practice of my old friend, the German doctor—for I still count him among my friends—may, through the teaching he received in his university, be connected with the practice of the great English physician, who, like Sydenham, is also "famous for all time."

I have found cupping very serviceable, particularly in cases of cardiac distress, as in angina pectoris, and in cases of advanced Bright's disease with cardiac complications.

The use of leeches seems to have been greatly abused in former times. Broussais is said to have used 100,000 in his own practice in a single year, and the importation of leeches into France in his time amounted to over 41,000,000 a year! The figures are astounding, and seem, indeed, almost incredible, but not so much so if the story which Sir Robert Christison tells of Lænnec be true:—

At a hospital visit, coming up to a patient with a pointed tongue—clean, all but a foul streak down the centre—"Oh," exclaimed he, "*la langue pointue! voila, signe infaillible d'une gastrite!* Any appetite?" "Appetite! yes, I could eat a horse." "*Néanmonis c'est gastrite.*" "Any thirst?" "No; no thirst." "*Néanmonis, gastrite.*" "Any pain in the stomach?" "No; none at all." "*Néanmonis, viola, la langue pointue; c'est gastrite! Cinquante sangsues à l'estomac.*"

Although, I daresay, all of us have ordered leeches, none of us, I am sure, have ever, or with such *sang-froid*, ordered fifty.

It is difficult, if not almost impossible, to ascertain the number of leeches annually imported at present into Great Britain. I have received, however, the following information from a London firm of drug merchants:—"Fifty years ago the average consumption of leeches at Guy's Hospital was from 18,000 to 22,000 a year. At present they do not have more than 300 to 500. St. Bartholomew's Hospital at one time had about 600 *per week*, but at the present time they have less than 500 *per annum*." The figures contrast strikingly with those above quoted, and, I believe, fairly represent the decline in the use of leeches which has taken place all over the country, both in hospital and in general practice.

¹ Harvey's Works, London, 1847, p. 119.

It is sometimes recommended to apply poultices after leeching. This is a very undesirable practice, particularly so when the application is to parts covered with bedclothes. Marshall Hall says—"I have known the patient inundated by the blood thus flowing from a dozen leech-bites upon the abdomen, and affected by the most fearful symptoms of exhaustion."

Gentlemen, I trust that the slight sketch of this subject which I have endeavoured to give has interested you, and may not be without profit in directing your attention to a method of treatment which, however much it was abused in the past, ought, no doubt, to have its place in modern therapeutics. General blood-letting is no cure for inflammation, but in cases of the kinds which I have pointed out, particularly where the right side of the heart is overburdened, and in danger of failing, it ought not to be forgotten.

FREEDOM IN TEACHING.¹

By G. A. GIBSON, M.D., D.Sc., F.R.C.P. ED.,

Physician to the Royal Infirmary and Lecturer on Medicine in the School of Medicine of the Royal College, Edinburgh.

To say that your request to open the first session of the new century at Anderson's College Medical School conveyed a flattering compliment would be but a feeble expression of my feelings on receiving your invitation. There could be but little hesitation in acceding, if possible, to your wish, albeit two weighty considerations rendered my response to your summons a matter of anxious debate. It seemed doubtful if, in this age of public discussion, any subject could be found sufficiently fresh to deserve being put before you; it further appeared open to question whether any effort of mine might be worthy of the occasion. Well knowing how sympathetic an audience of medical students is to anyone who endeavours, no matter in how humble a fashion, to be of use to them in whatever sphere, such doubts have been swept aside.

It is, in truth, despite these misgivings, a pleasure to meet the undergraduates of this College. One and thirty years ago

¹ The Inaugural Address delivered at the opening of the winter session at Anderson's College Medical School on 18th October, 1901.

it was my privilege as a freshman to stand within the walls of the Western University when she, for the first time, occupied her new abode on the adjacent hill. My memory of the day on which her new portals first stood open, marked by a red stone though it be, is like a confused kaleidoscope of gorgeous academic tints, but my ear still rings, and ever will ring, with the insistent shouts of the junior medical world for that genial man who afterwards became a kind friend—Allen Thomson. Of another event there is in my mind a somewhat more distinct image—and this many of you will readily appreciate—of the great torchlight procession by which we, the younger members of the University, formally ratified in our own way the transference of her home from its old seat in the High Street to its present throne on Gilmorehill.

It seems to me that no matter could more usefully occupy our attention for a few minutes on this occasion than the consideration of freedom of teaching. It is my wish to speak upon this subject, which is, indeed, a matter of serious, nay, of vital importance to the wellbeing of our northern medical schools. In doing so it will be necessary for me to crave your leave to glance at some past events. You need not, however, fear any tedious investigations in the crudite, or, perhaps, even pedantic, manner of Dryasdust. A few eddies in the stream of time will alone claim our attention.

The subject chosen for these remarks naturally presents two aspects for our inspection—how it has been won for us, and how it is to be used. From these two different points of view let me invite you to regard it.

In early times, when anyone had attained to an extent of knowledge satisfactory to his teachers he received the stamp of their approbation, and, *ipso facto*, became also himself a teacher. In virtue of this sanction—by whatsoever name it was called—learned men went out over the surface of the known world, from the Columns of Hercules to the Golden Chersonese, burning with enthusiasm to impart their knowledge to all who might listen. The story told by Bulæus¹ of the beginnings of university education in France is, in this connection, of vivid interest. Two wandering Scots appeared one day in a French town, during the reign of Charlemagne, and, standing in the market-place, offered to sell wisdom to those who were willing to buy of them. The monarch—a worthy grandson of Charles the Hammer, in his desire to improve the condition of his people, no less than to extend their bounds—having been told of this, summoned them to his

¹ Bulæus, *Historia Universitatis Parisiensis*, Tomus I, p. 101.

presence, and, learning that their purpose was a real desire to teach, vouchsafed to them his countenance and support. In this way, according to the historian of the University of Paris, did academic institutions have their origin in France, and these two learned wayfarers from our shores may justly be regarded as the precursors of Abelard and Sorbonne. In this age when university extension is not merely in the air, but is in many seats of learning an accomplished fact, our warm admiration goes back across the gulf that separates us from them to those early forerunners of modern progress.

It will readily be understood from these remarks that it is not possible to agree with the distinguished man who so long led a powerful party in the arena of politics, in his views regarding the nature of universities. "It is, I believe, a fact," said Gladstone, in his rectorial address to the University of Edinburgh,¹ "and if so, it is a fact highly instructive and suggestive, that the university, as such, is a Christian institution." To hold this opinion is assuredly to narrow our conception of education. Are we not to regard the great schools of Egypt and of Greece as in a very real sense universities? Certainly we must, or the name itself becomes a misnomer; the belief, therefore, of Kirkpatrick² commends itself to my judgment, that the Academy at Athens and the Museum at Alexandria were true prototypes of the modern university.

Confining our attention to the study of medicine, with the sciences ancillary thereto, and restricting our purview to the schools of Edinburgh and Glasgow, we shall find that this spirit, *i.e.*, of freedom in teaching, has led either to the foundation or to the development of medical education in these renowned seats of learning. In the city of St. Kentigern, it is true, medical education had no place in the earliest days of the University. It must not be forgotten that my first "Alma Mater" goes back into the times of the Renaissance. She owes her origin to Nicholas V, a man to whom is very largely due the revival of learning in Europe, and of whom Gibbon,³ no partial critic, says, "the fame of Nicholas the Fifth has not been adequate to his merits." At first the University comprised little beyond the Faculties of Arts and of Divinity—Medicine had no place within her palaces, if, indeed,

¹ Gladstone, *Rectorial Addresses delivered before the University of Edinburgh*, edited by A. Stodart Walker, p. 5.

² Kirkpatrick, *Historically Received Conception of the University*, pp. 116, 123.

³ Gibbon, *Decline and Fall of the Roman Empire*, vol. xii, p. 134.

we may thus think of the interesting old buildings near the Molendinar Burn. In the fulness of time, nevertheless, Glasgow was to have a medical school, and a great one too. This was, however, the creation of a later age.

But for "the nominal tribute paid to medicine," as Duncan¹ gracefully puts it, by the existence of the Chair held for nine years by Robert Mayne, and which lapsed on his death in 1646, there was no attempt even to recognise in the most shadowy fashion the claims of the healing art. In 1714 the Chair of Medicine was re-established, and John Johnstoun was elected to it, yet the recently published and deeply interesting volume dealing with the history of the University² correctly puts the matter:—"Although the real foundation of the Faculty of Medicine may, therefore, be dated from the re-establishment of the Chair of Medicine in 1714, no systematic instruction in Physic appears to have been given within the University till 1746, when Dr. Cullen, with the sanction of the Professor, delivered a course of lectures, while he also taught *Materia Medica*, Botany, and Chemistry."

This at once leads to the heart of the matter. William Cullen, one of the greatest names on the medical roll of fame—notwithstanding the much more lowly estimate of him by my friend, Professor Clifford Allbutt³—began his distinguished career by teaching as a free-lance outside those walls within which he was destined afterwards to shine as one of the brightest ornaments. Did he not, before his professorial honours were attained, impart the fire of his enthusiasm to Joseph Black? Was not Thomas Thomson, the author of chemical symbols, a teacher in Glasgow before he adorned the University Senate? These, and many other instances of what may be termed the scientific lineage of Glasgow's famous men, for much of my knowledge of which my warm thanks are due to the interesting researches of my friend, Dr. James Finlayson,⁴ show what benefits have arisen and may occur from the spirit of freedom in teaching.

There are some whom we ought, on this occasion more especially, to remember with reverence. The institution in which we meet to-day was founded one hundred and five years ago by the bequest of John Anderson. This remarkable

¹ Duncan, *Memorials of the Faculty of Physicians and Surgeons of Glasgow*, p. 125.

² *University of Glasgow—Old and New*, p. 107.

³ Clifford Allbutt, *British Medical Journal*, 5th January, 1901.

⁴ Finlayson, *Members of the Medical Profession in Glasgow of Wide Celebrity*, p. 4.

man may well be likened to our fellow-countryman, the "admirable Crichton," for, master alike of ancient and modern languages, conversant with the natural as well as the physical sciences, learned in the lore now included under the term anthropology, a critic of the science and art of war, and skilled in numerous technical details of many handicrafts, he may well be held, like the sixteenth century prodigy, to have been armed with an intellectual panoply. It will redound to the credit of John Anderson that he, long in advance of his age, saw how necessary it was for technical skill to be founded on accurate scientific knowledge, and that he generously gave his time, energy, and means for the furtherance of technical education.

The Medical School of Anderson's College has just completed its first hundred years of existence. Taking its origin in 1800, when the distinguished John Burns began to teach anatomy, assisted by his eminent brother Allan, it has been adorned by many famous men, amongst whom it is, perhaps, not invidious to mention, as one of the brightest stars in its firmament, Thomas Graham. It has provided numerous occupants of distinguished posts in different universities, and it is not without interest to recall how, within forty years of its inception, it furnished in Thomas Garnett the first professor of the Royal Institution, and in Thomas Graham the Master of the Mint. Its pupils have gone out into every part of the world, and some have, like David Livingstone, rendered the whole human race their debtors. If time permitted us to trace out fully the history of these famous men, we should see how they in their day bore themselves like men—

"Et quasi cursores vitæ lampada tradunt."¹

If you will permit me to bring before you a few facts regarding that medical school which now claims my allegiance, it will be easy further to illustrate my meaning. Nearly a century before the establishment of the Town's College—now the University of Edinburgh—some earnest men, amongst whom must be mentioned Gilbert Primrose, ancestor of "the lonely ploughman," as it is at present the fashion to term Lord Rosebery, induced the City Fathers to grant them, in 1505, a "seal of cause" calling into existence the "Incorporation of Barber Surgeons." This deed, ratified in due course by James IV, undoubtedly created a living school of medicine, and in its terms, indeed, explicitly enjoined teaching. Here,

¹ Lucretius, *De verum natura*, ii, 78.

for more than two hundred years, the only real medical teaching in Edinburgh was carried on, for not until 1722 did the University seriously begin the task of medical education. It is of interest to observe how this duty was undertaken. In that year the Town Council appointed "the first Monro," then Professor in the Incorporation of Surgeons, as Professor of Anatomy in the University. In this transaction we have, as it were, an epitome of the progress of teaching in Edinburgh. Occasionally the Town Council, usually far-sighted, were led astray. It so happened that a worthy ancestor of mine was one of the pioneers in surgical teaching in the city. The surgical corporation in 1776 and 1777, after he had for about ten years been engaged in teaching surgery, attempted to obtain the creation of a Chair of Surgery in the University, but the great influence of "the second Monro" prevented this movement from being carried out. Monro induced the Town Council to appoint him professor of anatomy and surgery; gave a few perfunctory lectures on the latter subject to ease his conscience; thus the Chair of Surgery was not instituted till 1831—two generations later! In this way did the glamour of a great personality retard the progress of learning, and, to use a common figure of speech, put a spoke in the wheels of time. This was, fortunately, an uncommon occurrence. The more usual course of events has been that some man, full of enthusiasm for a subject, undertook to teach it, proved its usefulness as a factor in medical education, and by his success led the University authorities to found a chair or a lectureship for the subject. In a word, the University has been educated and guided to a great extent by the teachers outside her walls.

Now, it has to be remembered that for many years the teaching carried on outside the walls of the University, both in Edinburgh and Glasgow, was absolutely unrecognised by the Universities of these cities. In the days of "the third Monro," anyone who desired to learn anatomy found it necessary to study the subject beyond the walls, yet he must, forsooth, attend the prelections of the professor—or rather, if all tales are true, of the professor's grandfather—and pay fees twice over. The same appears to have been the sad fate of the Glasgow undergraduate, for it is obvious that, during the second quarter of last century, the Andersonian School had a larger number of anatomical students than the University, and assuredly the lectures given there were not qualifying for the degrees of the University. So absurd did this unjust restriction become, that in Edinburgh a strong agitation began

and culminated successfully in the decision of the Town Council, then patrons of the University, to issue statutes in 1840 allowing undergraduates to take a proportion of their classes outside. These statutes were strongly opposed by the professorial oligarchy, and an appeal to Cæsar was only settled in favour of freedom by the House of Lords in 1847. This protracted litigation, tedious as it may seem, was "but as yesterday when it is past" as compared with the "thirty years' war," if you will let me call it so, between the University and the Faculty of Physicians and Surgeons in this city, arising out of the rights to practise of their graduates and licentiates. This, however, by way of parenthesis.

Fortunately, we live in happier times. The decision of the House of Lords was followed by the Universities Act of 1858, by which undergraduates were allowed to take four of their classes in the extra-mural school, and this has been wisely extended by the Ordinances of the Universities Commission to half of the entire curriculum. The university authorities, the medical corporations, and the body of teachers realise that, for the furtherance of scientific progress, as well as for the advance of professional education, united efforts are essential. Jealous animosity has given place to generous emulation, and the teachers of to-day, whether within or without the walls of the universities, vie with each other in friendly rivalry.

For years it seemed to some of us in the East that it would tend to the advance of medical education if the different teachers in the extra-mural school were in some way organised. Various proposals with this end in view were carefully discussed, and at last, six years ago, we adopted an easily working scheme. This arrangement, while preserving perfect internal autonomy, vested the external management of the school in a Governing Board on which each of the Royal Colleges and the body of lecturers are equally represented. Would it be considered an unwarrantable piece of intrusion on my part to express the hope that, for the advancement of medical education, the different elements of the extra-mural school in this great city of the West will follow our example? We have already reaped a rich harvest from the seed which we have sown, in many ways, and only the other day we found the utility of our organisation when we were in some anxiety as to the benefits offered by Mr. Carnegie's munificent gift.

Of the advantages arising from a generous rivalry there can be no question. Every successful teacher has his own special gifts—these will naturally appeal to particular types

of pupils, and herein, it seems to me, lies one valuable result. But, further, in the existence of free competition, there is the possibility of training teachers. It may be true, as some would tell us, that the teacher, like the poet, is born, not made. Even granting this, he must yet be discovered and proved; it is accordingly well that he should go through a period of practical education in the art of teaching before he is called to occupy such a prominent and important post as a chair in any university. On the principle of the survival of the fittest, the useless teacher is soon eliminated.

Having in some measure given a sketch of the origin of those opportunities which we now enjoy, our attention must be given to the manner in which we may show ourselves worthy of the labours of those who have gone before us, by making the best use of the freedom which we owe to their exertions. In considering this branch of the subject, we shall find it presents several phases. Many-sided though it be, however, its main aspects are twofold—it may be regarded from the point of view of the teacher and also from that of the student.

On us who have the honour of holding responsible positions in medical education, it is incumbent to define the limits by which our teaching is to be bounded. The general scope of each branch of study is, as you well know, laid down with tolerable exactness in the regulations and statutes of the General Council, the Universities, and the Corporations. But, besides the limits prescribed by the enactments of the authorities charged with the duty of watching over the education and examination of medical aspirants, we have to consider the nature and extent of those subjects which we teach. In dealing with the natural sciences—and much of the training of medical students falls under this head—we must ever bear in mind that a portion of current belief, larger or smaller according to circumstances, is really matter of opinion. In no previous age, perhaps, has this been more true than in our own. Enormous strides have been made in almost every department of natural science, many of them led up to by induction or even intuition. On all sides we hear of the “fairyland of knowledge,” the “poetry of science,” and other high sounding phrases, whatever they may import. Now, my meaning is simply this—How far are we justified in our teaching in introducing such matters of opinion?

About a quarter of a century ago my old master, Virchow, shook the learned world by his famous speech on the “Freedom of Science.” The keynote of that address was the necessity

of restraint in what is taught by those accredited to give instruction. The thesis was illustrated by examples culled from many fields of scientific activity, and perhaps, if you will allow me a short quotation, the sum of the matter is to be found in the following paragraph:—¹

"From the repeated experience of the past we ought to take a signal warning, lest we should unnecessarily impose on ourselves the obligation, or succumb to the temptation, to draw conclusions at a time when we are not justified in so doing. Believe me, gentlemen, herein lies the great difficulty for every student of nature who addresses the world at large. Whoever speaks or writes for the public is bound, in my opinion, to examine with twofold exactness how much of that which he knows and says is objectively true. He is bound to take the greatest possible care that all the merely inductive generalizations which he makes, all his extended conclusions according to the laws of analogy—however obvious they may seem—be printed in smaller type under the text, and that in the text itself he put nothing but what is really objective truth."

"Gentlemen, I think we should be abusing our power, we should be imperilling our power, unless in our teaching we restrict ourselves to this perfectly legitimate, this perfectly safe and unassailable domain. From this domain we may make incursions into the field of problems, and I am sure that every venture of that kind will then find all needful security and support."

This must not be taken to mean that the realm of the imagination is to be altogether suppressed—far from it. It is the bounden duty of each and all of us to exercise those gifts of imagination with which we have been endowed, and in our country, where Celtic fire is tempered by Saxon purpose, it is not likely that any wild flights of fancy will lead us far astray. Even Virchow in his pleading allows a place for the imagination. Speaking of the tendency towards the objective in modern science, he remarks:—²

"Probably, too, the subjective current will still exist beside it. Then also, probably many an individual will be dreaming his fair dreams. The province of objective facts in Medicine, large as it has become, has still left so many borderlands unoccupied, that abundant opportunities are daily offered for anyone who pleases to speculate."

It is, indeed, very unsafe, even in such an objective age as

¹ Virchow, *The Freedom of Science in the Modern State*, p. 63.

² Virchow, *The Freedom of Science in the Modern State*, p. 48.

our own, to interfere with perfect freedom in matters of opinion. There can be no doubt that the belief of to-day often becomes the laughing-stock of to-morrow, but he would truly be unwise who acted habitually upon such a principle. Quite lately we have found the danger of belittling even the traditions and legends of ancient times. How few of us would have pictured in our wildest dreams the slightest foundation for the tale of Minos and the Cretan Labyrinth, yet the dawn of this twentieth century has seen, as the result of recent excavations, a real basis for that story, glowing with the poetic fancy of the Greek mind, which we all learned in our boyhood.

But when we would in every way encourage the play of the imagination, we must bear in mind the wise caution of Virchow, and only teach as fact what has been proved. We can, no doubt, extend the interest of our subject by the exercise of some imagination, and even stimulate inquiry by bringing forward matters of speculation. It must, nevertheless, be our primary duty as teachers chiefly to employ shafts from the quiver of truth, *i.e.*, of assured fact; in other words, to exercise a wise restraint in our utterance. Speaking for myself, there has always been much help in those lines of the greatest of the poets of Germany, himself no mean scientist:—¹

“So ist's mit aller Bildung auch beschaffen:
Vergebens werden ungebundene Geister
Nach der Vollendung reiner Höhe streben.

“Wer Grosses will, muss sich zusammen raffen:
In der Beschränkung zeigt sich erst der Meister,
Und das Gesetz nur kann uns Freiheit geben.”

It is, indeed, all important for us in all our efforts to bring those for whom we are responsible face to face with truth itself. Sometimes truth is self-evident, and we may then say with an ancient writer²—“Felix, quem veritas per se ipsam docet, non per figuras et voces transeuntes, sed sicuti se habet.” This, in the nature of things, cannot always be so, and we have, in the words of a still older author,³ to “prove all things.” In the realm of natural science—and much of our medical education, as we have seen, comes within this domain—absolute certainty does not reign with such uniformity of law as in the region of physical science. My late friend and

¹ Goethe, *Gedichte-Natur und Kunst*.

² *De Imitatione Christi*, lib. i, cap. 3.

³ 1 Thessalonians, v, 21.

teacher, Professor Tait, whom we have recently lost and shall always mourn, used to point out to me that it was doubtful whether the study of living beings could ever really merit the term "science;" he used to contend that from such studies no Kepler had as yet arisen, and probably never could arise; and he fearlessly asserted that, in the very nature of things, a Newton in connection with vital phenomena was out of the question. None of us will probably care to join issue with such a contention.

It was one of the great lessons which we learned from Lord Lister, first in Glasgow and later in Edinburgh, to face every problem honestly, and if a wrong decision had been reached to confess it candidly. His example has been to me throughout my teaching existence one of the most powerful incentives to rational scepticism in scientific inquiry and frank avowal of error when faulty conclusions are arrived at. While attempting, therefore, in every way only to teach what is ascertained fact, it is part of our duty to encourage you in the individual quest after truth. As Jowett says, in his contribution to that work which created such a sensation in theological circles in the middle of last century, "Doubt comes in at the window when Inquiry is denied at the door."¹

In approaching the other aspect of this portion of our subject—the last part of this address—let me ask you to regard my remarks as suggestions coming from an elder brother. You may, indeed, reply that advice from anyone standing in that relation is apt to be treated with but scant respect. But if any of you who have listened to me thus far should be inclined to resent brotherly admonition, let me entreat him to believe that there will be no attempt to "improve the occasion," as it is termed by certain religious circles.

Those of you who have already passed within the gateway of scientific study need no words of mine lauding hard, honest work. But to those who are only as yet on the threshold, it may be allowed me to sing its praises. There is a happiness in exertion of any kind, even when taken only for its own sake. This is as true of the intellectual as of the physical side of our nature; it applies with equal force to the cultivation of mental powers as of bodily activities. But the pleasure becomes much exalted when we know that the process of education has some definite end in view, when by thought, and word, and deed we are striving to fit ourselves for some part in life. We must remember where this rôle is to be played—

¹ Jowett, *Essays and Reviews*, p. 373.

a thought which arises very naturally on this St. Luke's Day. The stage is that of mankind; the issues of the drama are life and death. On the walls of your wonderful Exhibition hangs a classical canvas by a great modern painter, illustrating one of those legends which reveal the soul of a people—the struggle of Herakles with Death for the life of Alcestis. It requires no great effort of imagination to realise the agony of Admetus while the event of the contest hung in the balance, the gratitude of him and his wife when restored to each other, or their veneration for the large-hearted hero of the story. In our fight with the grim enemy we are, in the same way, watched with the eye of anxious solicitude, and the results of our struggle when successful are received with thankful hearts. It seems to me that we of the healing art are somewhat too diffident in this respect; we do not fully realise the affection by which we are surrounded. The great point to be kept ever in view is simply this, that to be able to take our place in the work of the world with success we must take pains to train ourselves. "The surest way," says Cicero,¹ "of seeming what we are is to be what we wish to be thought."

Work and wait—in these simple words lies a world of meaning. Some years ago, my friend, the late learned professor of medicine in your University, delivered an eloquent address² upon the text—"Tout vient à point à qui sait attendre." This address may confidently be recommended to you as containing most excellent advice in finished language—advice not to sit with folded hands waiting, like the immortal Macawber, for something to turn up, but to utilise every moment of waiting in self-education. This leads me to observe that the value of high ideals to all of us cannot be overestimated. As we grow older, our illusions tend to drop away one by one, but our ideals cannot thus be torn from us. Let us, therefore, keep before us the ambition of worth rather than fame, of integrity rather than success. It may be, it must be, that we shall all fall short of our ideal, but it is still there guiding us like a beacon through the shifting seas of life.

But while you strive with your whole strength to seize every opportunity for acquiring the knowledge which is your first object, it has not to be overlooked that there are other aims to be borne in mind. The bow cannot always be kept stretched, it must be unstrung at times; you will be in the right if you remind me of the outcome of "all work and no play." You must have hours of relaxation. Some of these

¹ *Cicero de Officiis*, translated by G. B. Gardiner, p. 100.

² Gairdner, *Lancet*, 1897, vol. ii, p. 299.

every day we hope you will spend in physical exertion. Without exercise the body must suffer, and when the body is impaired the mind must be affected. If our northern climate in winter is not propitious for out of doors exertion, its place may be taken by efficient substitutes. By all means seek opportunity for exercise in the gymnasium.

But there will be some time left over after routine work and necessary exercise. How are you to use it? Whatever you do, see that you do not loaf. For all of us, alas, the sands of time run but too swiftly in the glass. We cannot afford to lose any golden hours. Take up some hobby. Make some special study. Remember that the truest mental recreation lies in change of occupation. Read the poets—of the better sort. From Chaucer to Kipling you will find thoughts that are good and true. Read the novelist—also of the highest class. In their pages you will find refreshment for your minds. Study the histories of great races and the lives of great men—you will there find pictures of stirring deeds, portraits of noble men, and remember—

“We needs must love the highest when we see it.”¹

You will perceive that my purpose is to beg you with such strength as is in me to develop all the powers with which you have been endowed, so as to become complete men, as recommended by Plato in the *Republic*.² There are times, moreover, when you will find the truest solace in looking on the face of nature. Apart from the scientific interest derived from the study of natural objects, this beautiful world pours balm upon wearied spirits. Earth and sea and sky have a healing influence upon the jaded mind. There is not one of us who is not at times worn with the fight against the ills of life to which we have devoted ourselves, and heartily inclined to endorse the feeling depicted by the late Laureate—

“I found Him in the shining of the stars,
I mark'd Him in the flowering of His fields,
But in His ways with men I find Him not.”³

And, now, to bring these somewhat rambling remarks to a conclusion, you will allow me to wish this College in the new century a continuation and an extension of the usefulness, and therefore success, which have followed her career during the

¹ Tennyson, “Guinevere.”

² *The Dialogues of Plato*, translated by B. Jowett, vol. ii, book 3.

³ Tennyson, “The Passing of Arthur.”

hundred years of her existence. No better wish could be expressed, and you will believe me that it is as sincere as it is hearty. Inasmuch as the College is intimately bound up with the ancient University on the one hand, and with the venerable Faculty of Physicians and Surgeons on the other, it follows that their utility and prosperity must go hand in hand. The old fable of the family likened unto a faggot is here singularly applicable, and the well-wishers of the Glasgow Medical School, amongst whom you may count me as one of the most warm, cherish the fond hope that each branch of that great body may enjoy more and more the sunshine of prosperity as the reward of endeavour, may produce greater and greater results for the welfare of mankind, and may in still larger degree attract earnest students from every quarter, so that she may be able to say¹:—"Bring my sons from far, and my daughters from the ends of the earth."

OBSERVATIONS ON PERFORATED GASTRIC ULCER.

By R. O. ADAMSON, M.A., M.D.

I. THE SEX AND AGE OF PATIENTS.

WHETHER we deal with perforations into the general peritoneal cavity, or with those so situated as to form a subphrenic, or otherwise situated, collection of pus, it is well known that, broadly speaking, the sex of such patients is female; and the age, that of adolescence and early maturity. Exceptions, of course, are numerous. My own limited experience embraces one male, and a female, aged 70 years. At the other extreme, Roderick Maclaren² mentions the case of a girl, aged 14 years.

The proclivity of a certain sex and age is, of course, due to the fact that simple gastric ulcer occurs most commonly in that sex and at that age.

Speaking of perforation, Leith says it is "specially liable to occur in young chlorotic women."³ Spencer⁴ puts it that "young women between 16 and 30, especially when anæmic, are the commonest subjects, but men and older women suffer, although less often." Given any patient in whom simple

¹ Isaiah, xliii, 6.

² Maclaren, *British Medical Journal*, 1899, p. 863.

³ Leith, *Edinburgh Hospital Reports*, vol. iv.

⁴ Spencer, *Medical Annual*, 1900.

gastic ulcer has been diagnosed, its perforation will chiefly depend upon two things:—

1. On the *acute* or *chronic* course of the ulcer. Leith says it is most common in the acute variety, and no doubt this is so, although many ulcers found perforated show evidence of long standing.

2. The *position* of the ulcer, and the *possibility* of adhesions forming.

We cannot, therefore, from the age or sex of the patient expect any special assistance in diagnosis. Indeed, the exceptions to the general rule must specially be borne in mind, in case the lessened likelihood of perforation in a man, or aged person, incline one to error.

II. THE TIME ELAPSED SINCE POSSIBLE PERFORATION.

In all cases this factor is important to determine, with a view to diagnosis, prognosis, and treatment.

The value of some of the signs depends on the time between their development and the perforation. Especially is this the case in "absence of the liver dulness." The symptoms, indeed, have all a more or less important relation to the lapse of time, and might well be divided into:—

1. Those occurring immediately, which are sufficient to diagnose perforation of the stomach.

2. Those occurring later, which are evidence of a developed peritonitis.

In some obscure cases of intra-abdominal suppuration and thoracic complications, the possibility of perforation of the stomach some time previously may be a clue of utmost value. Hence, the recent history of the patient should be searched for such a thing.

As to prognosis, if operative interference is to be undertaken, the element of time influences the result largely, as is seen on examining statistics, of which, as an example of others, it will suffice to quote those of 83 cases collected by Lundie:—¹

"Operation—under 12 hours, 22 cases, 14 recoveries (64 per cent).					
"	12 to 14	"	23	"	6
"	over 24	"	38	"	5

These percentages are probably all too high, in consequence of unrecorded failures; their rapid decline is none the less significant, and gives warning most eloquently of the dangers of delay." We may note also that Keen and Tinker² mention

¹ Lundie, *Edinburgh Hospital Reports*, vol. iv.

² Keen and Tinker, *Philadelphia Medical Journal*, vol. i, p. 1104.

26 cases operated upon within 12 hours, with 80 per cent of recoveries, while in 16 cases operated on from within twelve to twenty-four hours there was but 50 per cent of recoveries.

The treatment, in this connection, can only be said to be influenced by the condition of the patient which has supervened since the time of the perforation. In some cases a few hours renders the hope in any treatment negative. In others, success has been attained after a lapse of many hours. The condition of the patient is the real guide.

The longest interval that I have been able to find between perforation and a successful operation is in a case detailed by Nicoll,¹ where six days had elapsed. Notwithstanding widespread peritonitis, and subsequent general pyæmia, this patient recovered.

On the other hand, if the symptoms and history pointed to a perforated ulcer, and, after some time had elapsed, the patient were to show improvement under medical treatment (a somewhat rare, but often enough recorded circumstance), then it would be justifiable to postpone surgical interference. This applies when the diagnosis is *uncertain*. Such cases are very treacherous, impose grave responsibility, and require most vigilant observation.

Marshall² relates an interesting case, where, despite surely many temptations to have an operation, the condition of the patient had apparently justified him in continuing medical treatment, which, after a long and complicated illness, was eventually successful. In his paper he says, "among numerous records of cases of perforation of the stomach there appears to be quite a number in which recovery took place," and that in nearly all of these no food had been taken for some time before the perforation. He quotes Fraser (*Lancet*, 1861) as reporting two such cases, and Redwood and Ross, one each, in the *Lancet* of 1871.

III. SHOCK, INCLUDING THE CONDITION OF THE PULSE AND TEMPERATURE.

This symptom is subject to great variations. It may vary from nil to instant death. Many authors, I think, magnify its intensity and its importance in the general run of cases. They speak of operation being necessarily postponed till "shock has passed off." This seems somewhat risky teaching. The anæsthetic, and the effects of the operation, are able to remove

¹ Nicoll, *Glasgow Medical Journal*, April, 1900.

² Marshall, *Glasgow Medical Journal*, February, 1900.

the cause of the shock. If the cause is not speedily removed a worse state is apt rapidly to supervene.

Considering, too, that in some cases death occurs twenty-four hours after perforation if no operation is done, and that statistics show that the mortality after operation increases enormously by delay in performing it, it is obvious that postponement of operation on account of shock must be very cautiously agreed upon.

The differences of opinion amongst surgeons on this point are observed in a perusal of the discussion on perforated gastric ulcer at the British Medical Association meeting in 1894. In the same year, Affleck¹ says, "The shock which follows the perforation, and which, as far as I have observed, seems decidedly more severe in the case of the stomach than in that of the intestines, at once places the patient beyond reach of reasonable hope from any operative interference, at least in the large majority of cases.

"For it must be admitted that the immediate effects of perforation differ in degree in different cases, some apparently suffering much less than others. In most, however, the profound nervous impression is manifested not merely by the pulse, but by the countenance, and the 'abdominal look' carries with it, to my mind, the prelude to a fatal issue. . . . In a considerable experience of cases of perforative peritonitis, I cannot recall any patient in whom this facial expression was pronounced surviving the operation of laparotomy."

Comparisons on the bases of this last clause must be most difficult, from the variations in the observers' ideas as to how much exactly the "facial expression" must show. In my own cases, two showed the "facial expression" very decidedly, and died after operation. In other two the degree of shock sustained was decidedly expressed in the face, and they recovered.

It is only, of course, of the *early* facial expression, before septic peritonitis has become established, that it is worth while speaking of in this connection.

No doubt Affleck's opinion in 1901 on the question of shock and operation is much more hopeful than it was in 1894.

In all my own cases the shock seemed largely to depend on the severity of the pain felt (see case of S. M. specially in this connection²). In that case the appearance of severe shock vanished when the intolerable pain was relieved by morphia.

¹ Affleck, *Edinburgh Hospital Reports*, vol. ii.

² *Scottish Medical and Surgical Journal*, December, 1899.

In none of the cases seen by me was the shock such as to cause any idea of delay in operation. Neither in any did the state of the pulse and temperature suggest it.

Cases of sudden death from perforation of gastric ulcer have been recorded (Littlejohn, Maurice, and others), whilst, on the other hand, Pearce Gould mentions a case in which shock was absent altogether.

We can, therefore, say that, as regards shock, each case must be treated on its own merits, always bearing in mind that much delay is, in many cases, a fatal error; and that, as regards diagnosis, it is a symptom of very slight value; and that there is more reason to fear deception by the absence, or minor degree, of shock than there is from its intensity, for in the latter event a serious internal disaster is more certainly suspected.

So far as the pulse is concerned, it was not, in any case seen by me, much altered from the normal. As a diagnostic sign, Martin, in his *Diseases of the Stomach*,¹ says the "pulse is extremely rapid." If a student were to trust to this statement he would likely be seriously misled. From my own experience I can safely say the pulse cannot be any guide to rely on; and, again, deception will more likely occur from absence of much change in it than from any marked alteration, if such be expected. This, of course, applies to the very earliest stage, before acute peritonitis has become developed. Martin means that early stage when he makes the statement quoted. In addition, while on this point, the pulse of abdominal shock—and that is the condition present—is as likely to be slow as rapid.

Spencer² thus alludes to this question:—"The pulse is usually quickened, and steadily rises. Perhaps a steadily rising pulse is, in an obscure case, the most certain indication for surgical interference; exceptionally, when the shock is very severe, the pulse-rate is subnormal. Subsequently, the signs of general peritonitis become more and more marked."

The temperature in all my cases was normal, or subnormal, as might be expected, in the first early stage, with which alone I am dealing. There is nothing in relation to it calling for further comment. Not a little of confusion on the questions of "shock," "pulse," "temperature," "facial expression," and other symptoms, arises from an omission on the part of writers to sharply distinguish the first or second hour after the perforation from those following six to ten or more hours later.

¹ Martin, *Diseases of the Stomach*.

² Spencer, *Medical Annual*, 1900.

IV. VOMITING.

This has been included by many authors as a symptom of perforation. For instance, Hemmeter says,¹ "The diagnostic signs of perforative peritonitis are—

"(a) Great rigidity of the abdominal muscles; flat abdomen.

"(b) Disappearance or diminution of the liver dulness; this sign may be absent, however, if only liquid gastric contents, and no air, escape into the peritoneum.

"(c) Vomiting."

It seems strange when only mentioning three diagnostic signs, two of the utmost and first importance, that the third should have little or no diagnostic importance at all. What, it may be asked, is a student to gather from such a description? He might find a patient with rigid, retracted abdomen, and absence of liver dulness, and yet, if vomiting were not, and had not been, present, one third of the diagnosis would be incomplete. Martin mentions vomiting amongst the chief symptoms. It is, however, only an occasional one. Dreschfeld says it is "generally absent; if it occurs at first it soon ceases," and this view is, I believe, the correct one. In one of my own cases there was incessant vomiting, but it was the vomiting of unsuspected septic peritonitis.² In other two cases the patient vomited once, and in other four absolutely not at all. It is necessary to mention its occurrence occasionally, but not to dwell on it, or to elevate it to the rank of an important symptom. To do so is, I think, dangerously misleading. On this point Barling³ says, "one or two vomits may take place, though this is hardly the rule;" and Marsham, "though a frequent symptom, . . . by no means always present."⁴

"Vomiting is often absent; it may occur once or so at the time of perforation, and be repeated if anything is swallowed, but usually it does not become frequent until peritonitis has set in."

V. THE LIVER DULNESS.

As again exemplifying the inequality of the treatment of the subject of perforation of the stomach, even by authors writing specially on the stomach, it may be noted that some do not mention the liver dulness at all in quite recent treatises.

¹ Hemmeter, *Diseases of the Stomach*, 1898, p. 480.

² Adamson, *Scottish Medical and Surgical Journal*, April, 1898.

³ Barling, *British Medical Journal*, June, 1895.

⁴ Marsham, *British Medical Journal*, November, 1893.

By far the best reference to it is found in Dreschfeld's article.¹ "Percussion gives a tympanitic note all over the abdomen, with absence or considerable diminution of the liver dulness, from the accumulation of gas between liver and diaphragm; this has been described as a pathognomonic sign of perforation, but it may be absent if adhesions exist between the stomach and the liver; on the other hand, we may have this symptom without perforation in simple tympanitis if coils of intestine, distended with gas, find their way between the diaphragm and the liver, and it may occur in simple non-perforative peritonitis."

In notes on my first case I gave a sufficient account of the usefulness of the alteration of the liver dulness as a sign,² and have also referred to it in other published cases. I will only say now that, to estimate its true value, the state of the abdomen generally must be taken into consideration, and clearness on this subject is usually absent from the reports of cases. The confusion is evident even in Dreschfeld's remarks in the last clauses. If the abdomen is flat, or, still more if it is retracted, diminution or absence of liver dulness carries much weight. If there is distension of the bowel at all, the sign loses at once in value, and becomes fallacious.

Further, it seems from examination of various livers in healthy people that percussion gives very variable results, especially in the middle line. So much depends on the state of the bowels and stomach, the shape of the chest, and the voluminosity of the lungs. As a rule, though not always, the absolute liver dulness extends in healthy people down to the costal arch in the nipple line, and in the middle line to the third of the distance between the xiphisternum and umbilicus, though this measurement is much more liable to variation than the former one; especially in stout people is it difficult to define, and in people with broad costal angles; in them, even under suspicious other circumstances, I would attach no importance to absence of liver dulness in the middle line.

Again, in people with long narrow chests, especially women, the costal margin in the nipple line may reach as low as to be within one inch to half an inch of the level of the umbilicus; and in such people, in whom there was no question of perforation, nor any reason to suspect cirrhotic contraction of the liver (and in whom also the total liver dulness was of about a normal extent), I have sometimes found a resonant note for

¹ Dreschfeld, *Allbutt's System of Medicine*, vol. iii, p. 536.

² Adamson, *Transactions of the Glasgow Medico-Chirurgical Society*, vol. i.

from 1 to fully 3 inches above the costal margin. Herein, therefore, there is the possibility of making erroneous deductions should such a person develop symptoms indicative of perforated gastric ulcer. It suggests the importance, in a general practice at least, of knowing the percussion limits of the liver, and their relation to the costal margin, in all one's patients who might be thought likely to develop at any time gastric perforation, just as we accustom ourselves to the rhythm and character of murmurs, the size of the heart, and the location of the apex beat in cardiac cases. In my own experience of this point the liver dulness was carefully examined in five cases. In one case it was not altered, so far as I could make out. In the other four it was diminished noticeably. In none at all was it absent altogether. In the case where no alteration was found the abdomen was retracted, and there was pyloric perforation. Presumably there had been but little gas in the stomach to escape; there were no adhesions of the stomach to the liver or other part.

Finally, there is nothing of greater importance, I think, during the observation of such cases, than the detection at one examination of a decrease of liver dulness which was not present, or present to a *less* extent, at a former examination, though it cannot be too often insisted that there is no value in such an observation if the abdomen has become swollen from distension of the intestines. One of my cases afforded a good example of this, the first examination being made three-quarters of an hour after the perforation had occurred, the second four hours after the first.¹ If this point be exactly determined it is an absolute diagnostic.

VI. CONDITION OF THE ABDOMINAL WALLS.

Extreme rigidity and board-like feeling was well marked in three cases observed by me; some rigidity, probably much more than was apparent owing to stoutness, present in a fourth; local rigidity in a fifth, very marked; and no rigidity at all in a sixth, this being perhaps accounted for by the advanced age and feeble general state of the patient.

In the early hours after perforation it must also be borne in mind that the abdomen is frequently *retracted*. This was certainly the case in four out of six cases seen by me (the perforation occurring freely into the peritoneal cavity).

Dreschfeld speaks of the "abdomen, as a rule, distended; but in a few cases, as pointed out by Wagner and myself, it

¹ Adamson, *Scottish Medical and Surgical Journal*, April, 1898.

may be retracted by the spasm of the abdominal walls." According to Hemmeter, "great rigidity of the abdominal muscles, flat abdomen." Spencer states—"At first the epigastrium is soft; after a few hours it becomes rigid and retracted, then distended, as peritonitis becomes established. The early lack of rigidity may prove deceptive." I have not myself, so far, met with a case where this "early lack of rigidity" has been present. Indeed, the very early presence of great rigidity was the striking feature in most cases. Marsham's experience is "abdominal rigidity in the early stage, and distension later on;" and Barling's, "The abdominal wall will be found to be retracted, and the muscles rigid, as though by packing the viscera together they were endeavouring to limit extravasation." At variance with these views on the whole and with my own experience, and exemplifying the diversity of opinion on many points on the diagnosis, is the following quotation from Martin—"It may be seen that the abdomen generally is moderately distended, the degree of distension depending on the amount of gas and liquid in the stomach at the time of perforation." I have not met, so far, any approach to this condition till long after the all-important early stage; and distension, when it does become evident, is surely never, or extremely rarely, due to the amount of liquid and gas which has escaped from the stomach.

Other authors are found not to be universally agreed on this point, and many recorders of cases ignore it altogether, and as it is one of great importance, especially in the differential diagnosis, I may state here what in my judgment is the correct view. I believe, then, that in the majority of cases of sudden perforation of a gastric ulcer into the peritoneal cavity, if the patient be seen within one to three hours of its occurrence, the abdomen will be found rigid, often remarkably so, and retracted to a certain degree; that if the escape of fluid and gas be scanty and localised, and in a region below the costal margin, there may be only local rigidity of the muscles; that every hour that elapses from the time of the perforation will bring a gradually increasing tumidity and distension of the abdomen, which will later on become the manifest condition; and that this distension depends upon the rapidity with which acute peritonitis and intestinal paralysis occur, and is secondary entirely to the perforation. Further, that the amount of gas and fluid cannot be conceived to distend the abdomen, in the face of the strong reflex contraction set up in the parietes, until, at least, the second stage of peritonitis has set in, with secretion of peritoneal fluid and relaxation of the muscular rigidity.

VII. THE RESPIRATION.

Barling says the "respiration is usually thoracic, quick, and shallow." This is in the earliest stage, shortly after perforation, with an abdomen more or less rigid and retracted. The later thoracic respiration associated with developed peritonitis is not referred to here. The point is that thoracic respiration may be present at once as one of the quite earliest signs. It was present in four of my cases, and made rather a striking picture in association with the general condition. There was, also, in three out of four cases, pain on respiration felt in the abdomen. The breathing was inclined to be shallow in these cases, "cautious," we might say. It was not in any case that I saw sufficiently quick to call for special notice. With regard to the respiration, then, it suffices to say that it is usually thoracic in type, often remarkably so, shallow, and sometimes accompanied by *abdominal* pain.

VIII. THE PAIN.

Generally the pain is sudden in onset and very severe. The worst pain may be heralded by attacks of slighter pain. It is felt usually in the "pit of the stomach," or between the xiphisternum and umbilicus, and to the left of this; or it may be in the left hypochondrium; or in rare instances in the right iliac fossa, or some part of the abdomen removed from the situation of the stomach; but by far the most commonly in the situations first mentioned. The pain may remain localised at its point of origin, but usually it spreads steadily, so as to involve a wider abdominal area. The pain is described as "burning," "agonising," "boring," "dreadful," and is evidently of a sharp excruciating nature.

There may be also pains of "referred" nature in the thorax, shoulders, and neck. These are unaccompanied by tenderness on pressure. The abdominal painful areas are tender, sometimes exceedingly so, to touch. Palpation may elicit one specially tender spot in the epigastric region, with lessened tenderness radiating outwards from it.

This symptom of pain, its character and situation, is one of the most striking presented. Its effects on the patient are frequently profound, and in more than one of the cases I saw I felt convinced that some disaster must have occurred internally before the clear clinical evidence of it was obtained.

The pronounced symptom of abdominal pain is always referred to in records of cases, though often cursorily, but it is

not so often that reference is made to pain in the shoulders or neck, or elsewhere than in the abdomen. In five cases I had a chance of determining this point, and it was present in four of them. In one case¹ the pains were very widely distributed, and as much complained of as the abdominal pains, especially a pain all down the spine, and also one behind the upper part of the sternum. In no other case seen by me were the "referred" pains so severe. In the other three the pains were chiefly in the clavicular and acromial regions. Apart from their interest, these pains are to be reckoned as of some assistance in diagnosis.

Affleck,² Lundie,³ Leith,⁴ Osler,⁵ and many others mention interesting examples. In Lundie's case, and in one of my own, and in a very striking and typical example reported by Morse,⁶ a feeling of impending death was present, and the patients also hardly dared to move. In the patient under my care this was very striking. She lay with her eyes shut, and would not so much as lift a finger, and only whispered when spoken to, so anxious was she to remain perfectly still. I remember when I entered the room, and saw her lying thus, I thought for an instant she must be in an hysterical trance. An important point is referred to by Dreschfeld when he says that the pain "may be seated rather over the right iliac fossa, and simulate the perforation of appendicitis, or pyosolpinx; this I have seen in not a few cases." Various writers explain this by the gravitation of stomach contents into that region.⁷

IX. TINKLING OR BELL-LIKE SOUNDS IN THE ABDOMEN.

In cases of subphrenic abscess, the signs in the left hypochondrium, and under the ribs up to the level of the normal stomach, resemble often very closely those of pyo-pneumothorax. This was exemplified in one of my cases in a striking manner.⁸

However, leaving subphrenic abscess out of count, and considering only cases of perforation into the free peritoneal cavity, I heard such sounds in three out of four cases in

¹ Adamson, *Transactions of the Glasgow Medico-Chirurgical Society*, vol. i.

² Affleck, *Edinburgh Hospital Reports*, vol. ii.

³ Lundie, *Edinburgh Hospital Reports*, vol. iv.

⁴ Leith, *Edinburgh Hospital Reports*, vol. iv.

⁵ Osler, *Principles of Medicine*, 1894.

⁶ Morse, *British Medical Journal*, February, 1897.

⁷ Middleton and others, *Transactions of the Glasgow Medico-Chirurgical Society*, vol. i.

⁸ Adamson, *British Medical Journal*, 21st August, 1897.

which they were listened for. In one case, the sounds were so peculiar that I felt some assurance in the diagnosis from the presence of similar sounds in another case some months later. In the third case in which they were heard they were distant and faint, and really not definite enough for diagnostic purposes. The sign is, however, one to be looked for. If once heard, the ear can, I think, easily distinguish the sounds from the usual gastric and intestinal ones. To describe them in words is difficult. It is best to call them tinkling or bubbling noises. I have found no reference to these anywhere in cases of perforation into the peritoneal cavity.

X. SITE OF PERFORATION.

Leaving out a case of subphrenic abscess due to perforation at the cardiac end, I have met with six cases of perforation into the peritoneal cavity. The perforation was on the *anterior* surface near the pylorus in four, and on the *posterior* surface near the pylorus in two.

In one of the anterior perforations, where the condition was unsuspected, there was, of course, no operation. The other three anterior perforations were operated on and recovered; the two posterior perforations were operated on and died. These results are not probably due to chance, but to the fact that posterior and inferior ulcers near the pylorus are likely to be much more serious, if perforated, than anterior ulcers, for this reason chiefly, that they favour free extravasation of the stomach contents, and that they offer more difficulty to the surgeon and prolong the operation, and thus possibly tend to diminish the time spent in cleansing the peritoneal cavity—a detail of great importance in the operation.

While the perforation of a posterior ulcer must be considered to have considerable influence on the prognosis, I do not think that any of the signs or symptoms of perforation can assist us in telling beforehand whether the ulcer is anterior or posterior. We cannot depend, in endeavouring to determine this point, either on the situation of subjective pain or objective tenderness. Each is apt to be removed from the actual point of perforation, perhaps very far removed.

XI. PRESENCE OF EXTRAVASATION INTO THE PERITONEAL CAVITY.

There may be very much extravasation present; there may be little; or there may be none; and on this point depends

partly the symptomatology, the prognosis, and the treatment. The variations in this factor of extravasation obviously depends on three things—

1. The situation of the ulcer.
2. The size of the rupture.
3. The state of the stomach with regard to the quantity and quality of contents at the time of rupture.

It is a mechanical question. Its influence is vital. A small perforation situated near the lesser curvature of the stomach anteriorly, and the organ empty, may cause not more than a localised peritonitis, with modified symptoms, or perhaps only a suspicion of perforation. Conversely to this, the rupture of an ulcer situated near the greater curvature posteriorly, with a full stomach and free rupture, will cause profuse extravasation, rapid intense peritonitis, all the violent symptoms of such, and a quickly fatal issue. All grades between these two extremes may be met with.

The extravasation may be so profuse, and so quickly added to by the accumulation of peritoneal serous effusion, that it may be detected by the ordinary signs of fluid free in the peritoneal cavity.¹

In any case in which the presence of free extravasation can be determined *plus* the evidence of perforated gastric ulcer, the indications for immediate operation are absolutely imperative, and the chance of success very small. But it is rarely that the presence of free extravasated fluid is detected by physical signs. In such cases the operation is more tedious, and the subsequent risks of general peritonitis, or localised abscess, or pyæmia, are much increased.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

BY DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(Continued from p. 252.)

II. *Micro-organisms*.—A study of the micro-organisms found in the urine, and their significance in diseases of the kidney,

¹ Adamson, *Scottish Medical and Surgical Journal*, December, 1899.

is of great importance to the surgeon. The value of a careful bacteriological examination of the urine has not until lately been sufficiently appreciated, but as surgeons come to be better acquainted with the methods of bacteriological research they will be more willing to employ them as an aid to diagnosis.

For our present purpose it is necessary not only to consider the methods employed in examining the urine for micro-organisms giving rise to septic conditions pure and simple, but also to give an account of such microbes as the tubercle bacillus, which is not truly a septic organism, although its presence materially predisposes to septic invasion.

Normally the urethra is found to be crowded by micro-organisms, only some of which, however, are pathogenic; indeed, the mucous membrane and the mucous glands are so infested with microbes that even prolonged and what may seem very thorough cleansing with mild antiseptic solutions fails to sterilise the passage. Even under normal circumstances this condition prevails as far up as the sphincter, but within it the urine is sterile. In health the kidney tissue is free from micro-organisms, and, even when they are introduced into the organ, the renal tissue appears to have a remarkable germicidal power and a capacity of eliminating them and their toxins from the system. To prevent contamination in the passage of the urine through the lower urinary tract, certain precautions are necessary. It may be accepted that the healthy urine as it is excreted is sterile, and the passage through which it flows, with the exception of the lower part of the urethra, is free from organisms, but while this is so certain precautions must be taken to ensure that the urine is not contaminated prior to or during its collection. In a healthy person, if the urethra of the subject and the hands of the examiner are carefully cleansed and sterilised, the urine drawn off by a sterile catheter, conveyed into a clean vessel, and shut off from contamination, decomposition does not take place, and no micro-organisms are found even although the urine is kept for a long time.

Another point of importance is that the urine gives very early evidence of the presence of micro-organisms in the blood; they may be excreted by the kidney without causing any change in the organ, and without altering the ordinary physical characters of the urine. The urine may be clear and acid in reaction, but usually it contains a trace of albumen, and in most septic diseases it may be shown by culture experiments to contain bacteria; consequently, micro-organisms in the urine

do not by their presence necessarily indicate disease of the urinary tract.

The sterile character of healthy urine has long been known—it was first demonstrated by Lister and by Pasteur many years ago—but although this has been known and taught, the full significance and importance of infection of the urinary tract has been until lately almost universally disregarded. This neglect has caused much harm and confusion, and has given rise to many theories to explain symptoms which are now known to be due to septic poisoning.

The first difficulty which presents itself in a bacteriological examination is to obtain the urine free from external contamination. To make a reliable observation, the urine must be conveyed from the bladder to a sterilised vessel, all risk of contamination being obviated. How, then, are we to proceed? The appliances, namely, Melchoir's catheter, tubing, and collecting vessels, must be sterilised by boiling in an alkaline solution, and afterwards washed in sterilised water; the glans penis and the prepuce, but especially the meatus, must be thoroughly washed with soap and water containing a little ammonia; this is followed by washing with spirits of wine, and afterwards with carbolic acid solution 1 in 40 in water. The meatus should also be douched with sterilised water, afterwards the mucous membrane should be carefully everted and again thoroughly cleansed. All the parts of the patient having been thoroughly disinfected, the surgeon again cleanses his hands, and lubricates the catheter with glycerine containing carbolic acid 1 part in 40, and passes it into the bladder. The urine is allowed to flow direct into the previously sterilised tubes of the centrifugal separator, and after a few minutes in the machine any deposit of microbes is thrown down, and can be at once examined microscopically, or by culture observations. The advantages of this rapid method are obvious.

The organisms which invade the urinary tract may be divided into two classes—those which induce decomposition of the organic constituents of the urine, and those which cause little or no chemical change in these substances. This distinction is a very important one. When organisms which do not possess the power of decomposing the organic constituents of the urine are introduced into the healthy urinary tract, they fail to produce any serious effect. For example, a pure culture of the bacillus coli or of the tubercle bacillus may fail to induce cystitis when injected into the uninjured bladder, but if separately or along with them urea-decomposing organisms are introduced, acute cystitis is sure to follow. When the

infection is "mixed," the progress of the disease is usually very rapid. The principal organisms which induce decomposition are the staphylococcus pyogenes aureus and albus, some staff bacilli, and diplococci. The latter may be non-pyogenic or pyogenic.

In the latter division are placed the streptococcus pyogenes, the coli bacilli, and the tubercle bacilli.

Excluding cases of catarrh of the kidney where the irritation is the result of the action of chemical agents, or of mechanical irritants such as renal calculi, inflammation is the result of pyogenic micro-organisms. This fact has been established as the result of many observations. While aseptic chemical and mechanical irritants may conduce to the formation of small quantities of pus, the pus so formed is free from organisms, and when absorbed does not produce secondary abscesses. While this statement must be accepted, it is also obvious that the resistance of the part subjected to such continuous irritation may be seriously diminished. Consequently, an injured kidney, or a kidney with a stone in it, is very liable to become septic.

The organisms which produce morbid changes in the kidney do not differ from those found in other tissues; indeed, almost all the microbes which are pyogenic in man gain an entrance to the urinary tract, and have been discovered as causes of disease in these parts. The two most frequent sources of infection are through the intestine on the one hand, and *via* the urethra on the other. In the former, the organisms reach the kidney through the blood; in the latter, along the urinary tract, or through the lymphatics.

The *bacillus coli communis*, first recognised, in 1886, by Escherich, is normally found in the intestine; but in diseases affecting the alimentary tract the number is enormously increased, and in certain well-known conditions the virulence of the organism is intensified.

Clado, in 1887, isolated an organism which he named "bacterie aseptique de la vessie," and a year later Halle and Albarran described the same bacillus under the term "bacterie pyogene." In 1891 Morell identified these microbes with the bacillus lactis aërogenes of Escherich; the year following, Krogius, and not long after Melchoir, showed them to be identical with the bacillus coli communis. The question of names has, therefore, led to much confusion in the past, but now, fortunately, the subject is cleared up considerably by the work of Rovsing, Denys, and others.

In the urinary passages, as elsewhere, the virulence of the

bacillus coli varies according to circumstances. In some cases its presence causes little or no disturbance, while in other instances its virulence is great, and death may take place even before suppuration is established, as in acute septic interstitial nephritis. The *bacillus coli* is by some observers supposed to be the most frequent cause of inflammation of the urinary tract, being in most instances absorbed into the circulation through lesions in the intestine and deposited in the kidney. This occurs most commonly when the intestinal tract is obviously diseased. It is found, as a matter of experience, that pyelitis or septic nephritis comes on very commonly in the course of convalescence from enteric fever, dysentery, or acute diarrhoea. The *bacillus coli* or its products probably also plays an important part in the etiology of certain nervous lesions associated with chronic inflammatory diseases of the urinary tract. The exact pathological position of the *bacillus coli* has not been, however, satisfactorily determined, and that position is rendered more difficult to ascertain by *post-mortem* examinations, from the circumstance that the organism multiplies with great rapidity and penetrates even distant parts after the death of the individual, and may even spread from the intestine to the closed cavities, organs, and fluids of the body. Any injury of the intestine, or even injury of the tissues in its neighbourhood, seems to be sufficient to promote the emigration. Probably the microbes are transuded from the intestine very much in the same manner, and through similar causes as induce the exudation of serous fluid; in fact, the two transudations are often coincident, but their relationship to one another is not fully understood. Probably the serous exudation is a result of the migration of the microbes.

The *bacillus coli communis* is a short rod resembling the *bacillus* of enteric fever, but it has rounded ends and possesses the power of movement due to cilia, which are often double or multiple, but sometimes single; it is easily isolated. On agar, within twenty-four hours large superficial and small deep colonies form; these are denser and more glancing than the enteric *bacillus*, and of a slightly brownish-white colour. On potato, the growth is also of a brownish tinge, spreads rapidly, and bubbles of gas are seen around the colonies. In this respect it contrasts with the enteric *bacillus*, the colonies of which are colourless and free from gas.

In the intestine it is clearly non-pathogenic, but when it migrates to other parts, whether living or dead, it is strongly pyogenic. The soluble products of the growth of the *bacillus* seem to be the same in their action whatever may be the

medium employed, but the source from which the organisms are derived has a very important influence on their action. It is a fact worthy of note that the organisms taken as a pure culture from a peritonitis arising from a perforation of the intestine are more virulent than when taken from a healthy intestine; or again, if the intestine be obstructed artificially the activity of the bacillus is also increased. In different cases of pyelitis and cystitis the same peculiarities may be observed; but while the organisms derived from one case on cultivation and inoculation into animals may produce very mild effects, those taken from another case which appears to be exactly similar may induce very grave results. The bacillus coli seems also to have the power of increasing the activity of other bacilli, or of rendering their product more harmful.

The discovery of the *tubercle bacillus* in the urine in diseases of the urinary tract has very much the same import in diagnosis as the detection of it in the sputum in pulmonary troubles. Its presence points to the cause, not to the gravity and extent of the lesion. In renal tuberculosis, as in phthisis pulmonalis, the organism may be present for a time, and disappear, but notwithstanding this possibility, its presence must be looked upon as an important danger signal. The presence of tubercle bacilli in the urine does not necessarily indicate disease in the urinary tract, as it is now recognised that the bacillus may be eliminated by the kidney without infecting the tissues through which it passes.

It is more difficult to obtain the bacilli from urine than from sputum; they are less numerous in proportion to the medium in which they lie—in urine the processes of decomposition destroys them more rapidly, and smegma bacilli are apt to be mistaken for them. Koch, König, Leyden, and others have endeavoured to distinguish these bacilli from one another by staining methods, but have failed. Muir, however, says, "we have found that in smegma it can be readily decolourised by a minute's exposure to alcohol, after the usual treatment with sulphuric acid, and thus can be readily distinguished from the tubercle bacillus." The former is non-pathogenic when inoculated into animals.

According to Tilden Brown, the most favourable time to look for the tubercle bacillus is immediately after an hæmaturia. This may be so, but the writer has found that it is in the samples of urine containing heavy purulent particles that the bacilli are most abundant, and that they are most readily found when the deposit from freshly passed urine is examined by the aid of the centrifuge. When a centrifuge is not at

hand, the method to be employed is as follows:—Allow a quantity of urine to stand in a conical glass in a cold place for not more than six hours, and from the deposit select a small quantity of *débris* and place it in a glass of $\frac{3}{4}$ per cent salt solution. It is more rapid and more reliable, however, to obtain separation of bacilli by the employment of the centrifuge. This method should always be resorted to when the bacilli are small in number, or when the urine contains much mucus or blood. When large quantities of mucus are present it may be necessary to render the urine slightly alkaline before using the centrifuge. Having placed a small fragment of the *débris* so collected on a clean cover-glass, it should be spread out into a thin layer by pressing another cover-glass against it between the finger and thumb. On separating the cover-glasses a thin film of *débris* will be found adhering to each. The glasses first must be air-dried, and then the films may be more firmly fixed by drying over a spirit-lamp or in front of a fire. The cover-glasses are then placed in, or, still better, floated upon (with the film side downward), a solution of aniline magenta or a staining fluid of gentian violet. When the film has become sufficiently stained the colour may be abstracted from all structures other than the tubercle bacilli by passing the cover-glass through a 25 per cent solution of nitric acid. The action of the acid may be arrested by carefully washing the specimen in pure water. When examining the urinary *débris* for tubercle bacilli it is necessary in most cases to prepare at least half a dozen specimens. Should bacilli be present they will be recognised by a magnifying power of 750 diameters as minute rod-shaped bodies, coloured according to the nature of the staining fluid employed. They are from 3 to 7 micro-millimeters long; they may be straight, but they are more frequently curved or bent upon themselves at an obtuse angle; they are frequently beaded, and they occur in bundles and singly.

From the urine the micro-organisms are not easily cultivated, as putrefactive bacteria contaminate the culture and destroy the specific bacilli. Koch, however, states that he has succeeded in cultivating tubercle bacilli from cases of tuberculous pyelitis. In some instances the bacilli in the urine are so few in number that it is difficult, or almost impossible, to discover them simply by the microscope; in such instances inoculation experiments may help to clear up the diagnosis.

Tuberculosis can be communicated artificially to animals in many different ways, in fact, through any of the channels of access to the body, by inhalation, by feeding animals on

tuberculous products, or by injection into the serous cavities, beneath the skin, or into the anterior chamber of the eye, or into veins. When tuberculous urine is injected subcutaneously into guinea-pigs or into rabbits it produces a typical tuberculosis within ten or twelve days. The local swelling may break down, caseate and ulcerate, while the lymphatic glands related to the part become enlarged and firm, and after a time they may also caseate, and the disease passes on to another group. When injected into the peritoneal cavity, tuberculous urine produces an extensive tuberculous infiltration of the omentum and acute tuberculous peritonitis. Normal urine, when aseptic, becomes absorbed without producing any evil effect, or, when septic, it may produce a suppurative peritonitis. If, however, the experiment is performed with care, healthy urine produces a negative result, but if the urine contains tubercle bacilli or their spores acute miliary tuberculosis is developed in the course of a few weeks, when the injection is made into the peritoneum, or if the urine be placed underneath the skin a hard tuberculous nodule is formed.

The *streptococcus pyogenes* not infrequently gives rise to septic infection of the urinary tract, and brings about diffuse inflammation and suppuration. When present in pure cultures it does not decompose urea, but it is frequently associated with the presence of other organisms possessing that power, consequently it is generally found in alkaline urine. In character it closely resembles the streptococcus of erysipelas, and by most observers the two are regarded as identical.

We may now consider the micro-organisms which cause decomposition of urea, and are, therefore, found in alkaline urine only.

The *staphylococcus pyogenes aureus* is one of the most virulent septic organisms, and is very widely distributed, occurring in almost all suppurations, in normal saliva, in water, in dust, in the air, and especially on the surface of the skin. When it gains access to the urinary passages it rapidly propagates, causes decomposition of urea, and the alkaline urine, by acting upon the mucous membrane, reduces its resisting power and facilitates the entrance of the organism into the tissue.

If these organisms gain access to the blood in considerable numbers, they produce in a short time all the symptoms of septic poisoning and evidence of infective thrombosis throughout the body. If small in number they may gradually disappear, leaving behind only small local abscesses. These are found most commonly in the kidneys as small, yellow, spheroidal, or

wedge-shaped bodies, surrounded by dark areas of hyperæmic tissue. Before pus forms the capillaries are completely blocked with cocci. This happens generally in the cortex, the emboli being carried to the ascending arteries or to the glomeruli, where they become impacted. The infarction rapidly necroses, and around the necrosed area a dense zone of leucocytes forms, and, gradually softening, may rupture into the uriniferous tubules, and from there the organisms become washed down into the bladder.

Staphylococcus pyogenes albus is less malignant than the yellow form, but closely resembles it, and by some bacteriologists is regarded as a variety of the organism described above; it seems, however, impossible to transform the one organism into the other.

Besides those above mentioned, there are many other varieties of organisms found in the urine in inflammatory diseases of the urinary tract, but these are the most important.

(To be continued.)

To the Editors of the "Glasgow Medical Journal."

DEAR SIRS,—In the current series of articles on "Surgical Diseases of the Kidney," at page 336, vol. lv, I made use of a quotation from a paper by Dr. George M. Edebohls. The quotation marks are correct to within two lines from the foot of page 336, but by some mistake the paragraph following was not included in inverted commas. I think it right to call the attention of your readers to this error, as it might be thought that I claimed for myself what belonged to the author from whom I made the quotation.—I am, yours truly,

DAVID NEWMAN.

[Dr. Newman has also informed us that in his MS., which he has preserved, the quotation marks are correctly placed.—EDITORS.]

"VIS MEDICATRIX NATURÆ."

BY WILLIAM FINDLAY, M.D.

HIPPOCRATES, deep-lair'd, they tell,
I' th' "infnite book o' secrecy,"
That's writ by Nature's cunnin' sel',
First taught to man this theory—
The ills to whilk our flesh is heir
Are no just left to chance a prey,
But trusted safe in her wise care—
"Vis medicatrix Naturæ."

That morbid states, disease we ca',
Are formed an' cured, as 'twere by stealth,
By just sic ministers an' law,
As doth preside o'er perfect health;
An' when no meddlet wi' by art—
Diverted frae their ain true way, ,
She a' the better plays her part—
"Vis medicatrix Naturæ."

Whilk is but in an aulder guise
The new immunity made guid,
When Nature does antagonise
The microbes' toxines in the bluid;
An' splendid shaws the prescient part
The grand auld man o' Greece did play,
Wha warn'd his brethren ne'er to thwart
"Vis medicatrix Naturæ."

An' means in honest plain braid Scotch,
That's spoke in ilka burgh toun,
Don't mix wi' drogs some d——d hotch potch,
To turn folks stomachs upside down;
Study diseases' nat'ral course,
How they behave frae day to day,
Syne in thae words ye'll see the force—
"Vis medicatrix Naturæ."

Sae when in doubt 'bout the remead,
Don't keep fling, flinging, in the dark,
Ae druschoch at anither's heid,
In the vain houp to hit the mark;
But if in time ye wad be wise,
An' no the cure spoil or delay,
Observe Hippocrates' device—
"Vis medicatrix Naturæ."

The adage ye'll hae heard maybe,
 Its application trite as wide,
 When doctors they do disagree,
 Wha shall the knotty point decide?
 In sic a case the safest guide
 To lippen till is that whilk ay
 Wise in the system doth preside—
 " *Vis medicatrix Naturæ*."

'Twad be, says Syd'nham, blasphemy
 To question Nature's healin' skill,
 Sin' that wad to the Deity
 Impute e'en waur than want o' will,
 Wha has sin' auld creation's daw
 Preserved alive His family
 By that self-regulatin' law—
 " *Vis medicatrix Naturæ*."

The brashes o' the puir dumb beasts
 Left seemin'ly to cure themsel's,
 An' savages doctored by priests
 Wi' superstitious cantraip spells,
 This vera doctrine teaches plain,
 Save for the part that she did play,
 The race wad a' lang syne been slain—
 " *Vis medicatrix Naturæ*."

E'en the delusive principle
 O' feckless homœopathy,
 By dose infinitesimal,
 As guid as lea's the field quite free
 To Nature's sel' to act her part,
 Whilk proves as clear as honest day
 That she's the frien' mair than our art—
 " *Vis medicatrix Naturæ*."

This new auld truth weel pondered o'er,
 O' a Divine-appointed law
 The sick quiet workin' to restore,
 Should mak' us pause, wi' fear and awe,
 Before we lichtly meddle in
 Sae marvellous a mystery,
 As a physician b'low the skin—
 " *Vis medicatrix Naturæ*."

For instance, in pneumonitis,
 The doctors used to starve an' bluid,
 An' blister wi' cantharides
 Until the flesh it was raw-red.

Sic punishment they did believe
Wad shorten the disease's stay,
While she was laughin' in her sleeve—
"Vis medicatrix Naturæ."

An' some this daft barbarity
Still practise wi' the Spanish flee;
But if they 'd stan' by rev'rently,
An' at her wark auld Nature see,
How she the "turn" brings clean about
On the Divine-appointed day,
They'd ne'er again in future flout
"Vis medicatrix Naturæ."

In fevers it's the vera same,
There are wha think, in their conceit,
Wi' some bit drog to quench the flame,
An' put the patient on his feet.
Let sic beware, else in his grave
Their victim they're mair like to lay.
Her han's sleer than theirs to save—
"Vis medicatrix Naturæ."

Sae is 't, indeed, in a' acute
Or mild internal morbid strife,
Nor is it safe to lea' clean out
What's aft reached by the surgeon's knife;
For even he can hardly dare
This occult power to disobey,
But does his best to speak her fair—
"Vis medicatrix Naturæ."

An' whiles, to think, I hae been fain,
That through this worl' o' guid an' ill,
As weel's disease wi' dule an' pain,
There works a par'llel han' o' skill.
Its errant bairns quiet wysin' a'
Towards that perfect sinless day,
Whilk holy men in dreams foresaw—
"Vis medicatrix Naturæ."

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

John Andrew Aitken (B, Z).
 George Allison Allan (B, Z, P, C).
 Robert Anderson (Z).
 James Henderson Baird, B.A. (B, P).
 Edgar Barnes (B, P).
 George Duncan Morrison Beaton (B).
 John Charles Bosworth (C).
 Donald Livingstone Carmichael (B, P).
 John Paterson Carmichael (B, C).
 Charles Gaine Angus Chislett (Z, P).
 Donald Clark (B, P).
 James Alexander Cowie, B.A., B.Sc. (B).
 Arthur Muir Crawford (B, P).
 Harold Windley Dempster (B, Z, P, C).
 Robert Scott Dewar, M.A. (B).
 Walter Duffy, M.A. (Z, P).
 John Shaw Dunn (Z).
 Eric John Dyke (B, C).
 Hamilton William Dyke (B, P).
 James Fairley (B, P).
 Harry Prescott Fairlie (B, P).
 Alexander Burns Ferguson (B, P).
 Thomas Henderson Forrest (B, P).
 James Wilfred Georgeson (B).
 William Gilbert (B, P).
 Joseph Glaister (C).
 Alexander Graham (Z).
 John Isdale Greig (B, Z).
 William Grier (B, P).
 Robert Neil Guthrie (B, P).
 Charles Francis Dyer Hammond (P, C).
 John Hammond (B, Z).
 Frank Hauxwell (B, P).
 Robert M'Cowan Hill (C).
 Lawrence Hislop (C).
 Ralph Howell (C).
 Alexander Hunter (P).
 David Guthrie Hunter, M.A. (Z).
 William Boyd Jack (B, P).
 Arnold Ernest Jones (Z, C).
 Percy James Kelly (B, Z).
 John Keys (B, P).
 James Dunlop Kidd (B, P).
 James Towers Kirkland (P).

William Love Kirkwood (B, P).
 Peter Lowe, M.A., B.Sc. (B, Z).
 Angus Macaulay (Z, C).
 John Duncan M'Callum, M.A. (B, Z).
 John M'Cartney (B, Z).
 Thomas M'Cosh (B, Z).
 David Macdonald (B, P).
 Duncan M'Ewan (B, P).
 John Macintyre (B, P).
 Finlay John Mackay (P, C).
 Hugh Macnaught (B, P).
 Richard Cameron Macpherson (Z, P).
 Peter Maguire (B, Z, P, C).
 John Miller (B, P).
 William Miller (B, P).
 Henry Joseph Milligan (B, P).
 Robert Wright Mitchell (B, P).
 John Moffatt (Z).
 Kenneth Morrison (P, C).
 Arthur Geoghegan Paxton (B, P).
 Thomas Thomson Rankin (B, P).
 Daniel M'Kinlay Reid (B).
 James Mill Renton (B, P).
 Arthur Robertson (B, P).
 James Henry Anderson Robertson (B).
 William Rolland (Z, C).
 Alexander Cappie Russell (B, P).
 John Cooper Russell, M.A. (B, C).
 James Charles Donaldson Simpson (P, C).
 Robert Alexander Slater (Z).
 Thomas Baillie Smith (B, P).
 Arthur Anderson Stewart (P, C).
 Daniel Stewart (B, P, C).
 John Logan Stewart, M.A. (B, Z, P, C).
 Thomas Strain (B, Z, C).
 William Alexander Stuart (B, P).
 Joseph Roderick Sutherland (B, P).
 William Robb Taylor (B, C).
 Thomas Thom (B, P).
 Charles Samson Thomson (B, P).
 Robert Todd (B, P).
 William Young Turner, M.A. (B, Z).
 James Kennedy Welsh (Z).
 George Young (B, P).

WOMEN.

Bethia Shanks Alexander (P).
 Jeannie Thomson Clark (B, Z).
 Annie Rennie Hird (B, Z).
 Rose Isobel Hudson (B, Z).
 Katherine Robina Margaret Lucas (P).
 Agnes M'Phun (C).

Elizabeth Maud M'Vail (B, Z).
 Margaret Walker Millar (P, C).
 Edith Oversby (B).
 Vera Dagmar Reis (B, Z).
 Lily Smellie (P).
 Margaret Baillie Taylor (B, Z, P).

The following have passed the second professional examination in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

Robert Adam (M).
 Adolph Anderson (P).
 James Richard Sumner Anderson (P, M).
 Thomas Bennett, M.A. (M).
 Archibald Grainger Bisset (A, P).
 Alexander Blair (A).
 Robert George Bradford (P, M).
 John Brown (P).
 Carl Hamilton Browning (A, P, M).
 John Miller Hopkins Caldwell (A).
 Andrew Connal (A, P, M).
 John Cross (A).
 Hugh Collin Davies (A, M).
 David Dickie (M).
 James Forsyth (A, P, M).
 William Macmillan Gilmour (P, M).
 James Glover (A, P).
 George Gordon (P).
 John Hanson, M.A. (A, P, M).
 Saul Hyman Harris (M).
 William Harvey (M).
 John Monnette Huey (A, P).
 Malcolm Hutton, M.A. (A, P, M).
 Alexander Jamieson (P, M).
 John Muir Kelly (A).
 Alexander Dingwall Kennedy (A, M).
 Robert Dallas Kennedy (P).
 Alexander Leggat (P).
 Archibald Leitch (A).
 William Jamieson Logie (P).
 Thomas Walker Love (M).
 Donald Macaulay (A, P).
 John Bertram M'Cabe (P, M).

John Finlay Macdonald (A, P).
 David Duncan Fraser Macintyre (P).
 Norman Alexander Macleod (A, P, M).
 Andrew Alexander M'Whan (P).
 Alexander Matheson, M.A., B.Sc. (M).
 John Baird Morton (A, P, M).
 Gavin Muir (A).
 James Carmichael Pairman, M.A. (A, P, M).
 Daniel Stevenson Richmond (P, M).
 George Richmond (A, P, M).
 Peter Hamilton Robertson (M).
 Robert Thiu Craig Robertson (M).
 Campbell Ross (A, P).
 Lawrence Drew Shaw (P).
 John Macgregor Smith (P, M).
 John Black Stevenson (M).
 William David Henderson Stevenson M.A. (M).
 John Stewart (A, M).
 Norman Burgess Stewart (A, P).
 William Stewart (M).
 Peter Lindsay Sutherland (M).
 Joseph Walker, M.A. (M).
 Alexander Macmillan Watson (M).
 Robert Watson (P).
 William Norman West Watson (M).
 Griffith John Williams (M).
 Archibald Simpson Wilson (A).
 Robert M'Nair Wilson (A, P).
 Eldred Wright (A).
 Hugh Young (M).
 John Young, Glasgow (M).

WOMEN.

Jeanie Auld (A).
 Agnes Wallace Cameron (M).
 Mary Charlotte Cameron (M).
 Jane Campbell (A).
 Jessie Galloway Duncan (M).
 Kate Fraser, B.Sc. (M).
 Jane Reid Foulds Gilmour (M).
 Margaret Hardy (M).

Mary Lauchline M'Neill (M).
 Anna Pollock Martin (A).
 Eliza Jane Miller (M).
 Isabel Deane Mitchell (M).
 Margaret Hossack Smart (M).
 Jessie Marie Stewart (M).
 Janet Gardner Waddell (M).

The following have passed the third professional examination in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

William Armitage (P).	Alexander Armstrong MacFarlane (P, M).
Robert James Arthur (P, M).	John Matheson Mackellar (M).
Robert Bryson (P).	Ivy M'Kenzie, M.A., B.Sc. (P, M).
Angus Campbell (P, M).	James Roy M'Vail (P, M).
Robert Harold Campbell (P, M).	Robert Harry Manson (P).
Alexander Adam Carruthers (M).	Robert Menzies (M).
Robert Peplow Cartwright (M).	Alexander John Mitchell (P, M).
John Cairns Christie, M.A. (P, M).	John Mark Reid (M).
Samuel Campbell Cowan (P, M).	Norman Cumming Rogers (M).
James Craig (P, M).	James Russell (P).
James Dick, M.A. (P, M).	Frank Donald Scott (M).
Mitchell Innes Dick (M).	John Barbour Stewart (P, M).
Donald Douglas, M.A. (M).	John Restell Thomas (M).
William Dow (M).	John Forrest Weston (M).
William White George (P, M).	Joseph White, M.A., B.Sc. (P, M).
John Andrew Hagerty (M).	John Wilson (P).
John Kennedy (P).	
Daniel Douglas M'Dougall, M.A. (M).	

WOMEN.

Helen Stephen Baird, B.A. (M).	Margaret Edith Bryson (P, M).
Gertrude Dorman Bostock, B.Sc. (P, M).	Ethel Macleod Lochhead (P, M).
	Edith Christine Wallace (P, M).

At the recent professional examinations for the degrees of M.B., Ch.B., the following candidates passed with distinction in the subjects indicated:—

First Examination.—*In Botany, Zoology, and Physics:* George Allison Allan. *In Botany and Physics:* John Logan Stewart, M.A.; Joseph Roderick Sutherland. *In Zoology and Chemistry:* William Rolland. *In Botany:* Alexander Cappie Russell. *In Zoology:* John Shaw Dunn, Arnold Ernest Jones, John Duncan M'Callum, M.A.; James Kennedy Welsh. *In Physics:* James Henderson Baird, B.A.; Hamilton William Dyke, Alexander Hunter, William Love Kirkwood, Thomas Thomson Rankin, James Mill Renton, Arthur Robertson. *In Chemistry:* James Charles Donaldson Simpson.

Second Examination.—*In Anatomy and Physiology:* James Carmichael Pairman, M.A. *In Physiology and in Materia Medica and Therapeutics:* Carl Hamilton Browning. *In Anatomy:* John Baird Morton. *In Physiology:* Robert M'Nair Wilson. *In Materia Medica and Therapeutics:* Robert Adam, Thomas Walker Love, John Macgregor Smith, John Black Stevenson, Peter Lindsay Sutherland, William Norman West Watson.

Third Examination.—*In Pathology:* Gertrude Dorman Bostock, B.Sc.

DR. C. O. HAWTHORNE has recently been elected assistant physician on the staff of the North-West London Hospital. He has also been appointed sub-editor of *The Polyclinic*, which is the journal of the Medical Graduates' College, and is edited by Mr. Jonathan Hutchinson.

WESTERN INFIRMARY.—The following have been appointed resident assistants for the winter six months:—

House Physicians.—Joseph Goodwin Tomkinson, M.B., Ch.B., assistant to Professor M'Call Anderson; J. Stoddart Barr, M.B., Ch.B., assistant to Dr. Finlayson; Andrew T. Ross, assistant to Professor Gemmell; Reginald N. Dunlop, M.B., Ch.B., assistant to Professor Stockman.

House Surgeons.—Ross Kilpatrick, M.B., Ch.B., assistant to Dr. Patterson; Hugh Miller, M.B., Ch.B., assistant to Professor Sir Hector C. Cameron; Leonard Findlay, M.B., Ch.B., and Donald Steel, M.B., Ch.B., assistants to Professor Macewen; E. Seymour Chapman, assistant to Dr. Renton; George B. Eadie, M.B., Ch.B., assistant to Dr. Beatson.

Isolation Wards.—James Davidson, M.A., M.B., Ch.B.

GLASGOW SOUTHERN MEDICAL SOCIETY: ELECTION OF OFFICE-BEARERS.—The opening meeting of the session was held on Thursday, 3rd October, 1901, in the rooms of the Southern Medical Club, 18 South Portland Street. There was a large attendance of members, and, after some formal business had been transacted, the meeting proceeded to the election of office-bearers, with the following result:—*Honorary President*, Thomas M'Call Anderson, M.D., F.F.P.S.G.; *President*, John Stewart, M.D.; *Vice-Presidents*, Duncan Macgilvray, M.B., C.M., and Thomas Richmond, L.R.C.P., L.F.P.S.; *Treasurer*, Andrew S. Tindal, M.D.; *Secretary*, John Fraser Orr, M.D.; *Editorial Secretary*, Andrew Wauchope, M.B., C.M.; *Seal Keeper*, Matthew Dunning, M.B., C.M.; *Extra Members of Council*, John Lindsay Steven, M.D., F.F.P.S.G., Hugh Kelly, M.D., and James Hamilton, M.B., C.M., F.F.P.S.G.; *Court Medical*, William Watson, M.D. (Convener), Ebenezer Duncan, M.D., F.F.P.S.G., Robert Pollok, M.B., C.M., F.F.P.S.G., Thomas Kirkpatrick Monro, M.A., M.D., F.F.P.S.G., and Alexander Napier, M.D., F.F.P.S.G. *Representative to Victoria Infirmary*, Charles E. Robertson, M.D.

GLASGOW SOUTHERN MEDICAL SOCIETY: ANNUAL DINNER.—The annual dinner of this Society was held on Thursday, 17th October, 1901, in St. Enoch Station Hotel. Dr. John Stewart, President of the Society, occupied the chair, and there was a very large attendance of members and friends. Drs. Macgilvray and Richmond acted as croupiers, and, in addition to Professor M'Call Anderson, Dr. Bruce (Dingwall), and Dr. N. G. Cluckie, who were the guests of the Society for the evening, there were also present, among others, Professors

R. Stockman and J. Glaister, Dr. John Lindsay Steven, and Mr. John Lindsay.

After the loyal and patriotic toasts had been honoured, the CHAIRMAN proposed "Our Society."

To DR. WILLIAM WATSON was entrusted the toast of "Our Honorary President," and, in acknowledging,

PROFESSOR M'CALL ANDERSON reminded the company of the eminent men who had preceded him in the high office, and took occasion to thank the Society for the honour which had been conferred upon him.

The toast of "The General Medical Council" was proposed by DR. CHARLES E. ROBERTSON. In the course of his remarks, Dr. Robertson pointed out that this was the first occasion in the history of the Society that such a toast had been put upon the list. Its appearance on the list of toasts that night was due to the fact that for the first time the Society had been honoured with the presence, as a guest, of the representative of the general medical practitioners of Scotland. Dr. Robertson doubted if at the present time the General Medical Council could expect that the toast would be received with the enthusiasm and sincerity which its importance ought to command. Keeping in view the autocratic reception by the Medical Council of a serious and influential deputation in June last, representing over 400 practitioners in the West of Scotland, he could not conceive how this august body could hope to possess the confidence and respect of the medical profession in the West of Scotland. It was easy to say that theirs was a judicial body, and to imply that the deputation had no right to influence them in a matter which was still *sub-judice*; but when they as a judicial body framed an indictment so carelessly worded as to encroach on the rights of centuries, surely all whom this indictment covered were entitled at least to be heard in their own defence. He did not wish for a moment to touch a single jarring note in the evening's entertainment, but when one was asked to propose a toast it was only honest that the proposer should express his opinions in a straightforward manner. And he had no hesitation in saying that the constitution of the General Medical Council was unsound from the very foundation. What other Parliament—for it was the Medical Parliament—would the people of the twentieth century allow to be elected on the same basis as this was? What influence, for example, could the general practitioners in Scotland have when they were represented by only one man, and when the bulk of the members were responsible practically only to themselves? It

was the general practitioners of the country who were most interested in the work of the General Medical Council, and the majority of the members should, in his opinion, be elected by them. Then, assuredly, would the Council attend to the wants and desires of practitioners. Then we would have a Council that would be always standing up for the welfare of the profession, and exerting all its powers to protect our rights. Session after session at present is largely occupied by penal cases, until one begins almost to forget that they have other duties beyond. Bone-setters advertise daily in our newspapers, quacks distribute their bills in our streets and flourish, chemists prescribe medicine daily and continually in their places of business—all directly trespassing on the rights of medical men. Have these no interest for the General Medical Council? Have powers been asked to deal with these cases? Has Parliament been urged incessantly to grant this power? and if not, why not? He did not think that the General Medical Council was in very good grace with many people. Certainly not with Parliament, not with the medical profession, and he did not know that the members of the Council were satisfied even with themselves. And this state would undoubtedly continue until their antiquated method of election was abolished, and until those most interested in its success had the power to return the representatives. But while he made these complaints of the Council as a body, it was quite another matter when he referred to the gentleman whose name was associated with the toast. Dr. Bruce had long been their worthy representative on the Council, and although up till the present year he has been a stranger in this part of the district, yet this was the case no longer. When the trouble over poison-selling overtook them during the past year, Dr. Bruce travelled from Dingwall to be present at their Society's meetings, and he also displayed great courtesy and kindness towards the deputation while in London. He asked them to drink the toast of "The General Medical Council," coupled with the name of Dr. Bruce.

DR. BRUCE, in replying, remarked that, in his opinion, the General Medical Council was composed of too many members, and he thought that a change was desirable in its constitution. He expressed himself in favour of altering the Council in such a way as to make one-half of its members the representatives of general medical practitioners.

Among other toasts were—"The University and Medical School," proposed by DR. RICHMOND, and acknowledged by PROFESSOR STOCKMAN and DR. T. K. MONRO; "Our Guests,"

by DR. JOHN LINDSAY STEVEN, and replied to by DR. CLUCKIE and MR. JOHN LINDSAY; and "The Chairman," by DR. J. FRASER ORR.

The singing of "Auld Lang Syne" by the company brought to a close one of the most pleasant and successful dinners in the history of the Society.

REVIEWS.

Appendicitis: Its Pathology and Surgery. By C. B. LOCKWOOD, F.R.C.S. London: Macmillan & Co., Limited. 1901.

THE author strikes the keynote of his work by his objections in the introductory chapter to the clinical classification, which is very generally adopted, of the various states of "appendicitis," and suggests one in accordance with the pathological changes he has found in the specimens obtained by operation. It will readily be admitted that, if we could forecast the pathological state of the appendix from the clinical signs in our patients, our position would be very satisfactory, and the question of treatment would become one of the simplest matters. Our interest was therefore considerably aroused when, at the commencement of Chapter IV, we read the following—"As a rule, the changes are clear and distinct, and and it is easy to say that the case is one of appendicitis with ulceration, or appendicitis with stenosis. A case of appendicitis due to tubercle would also present no difficulties." We have carefully compared the sections dealing with the above-quoted conditions, but have not been able to find any point of real diagnostic importance; indeed, Mr. Lockwood, in describing Case 6 ("Ulceration of the mucosa with bacillary invasion"), directs attention to the close resemblance of the symptoms with those manifested by Case 30 ("Stenosis, with abundant streptococci in the contained fluid"), and to us they appear to be identical.

We do not find anything more definite in the chapters dealing with appendicitis in a systematic manner. The author does not appear to be quite clear about the "ease" with which the distinction may be made, for he often remarks that "no two cases are alike," and, when repeating it on page 106, he adds, "in clinical history, morbid anatomy, or morbid

histology," there is a good deal of truth in the remark. When he says, regarding Case 39, "Until the appendix had been excised I did not know whether it might not contain a concretion, or be chronically ulcerated, or even perforated, with a small, localised abscess;" we feel that his classification is hardly workable.

Eighty-three cases are reported, with a note of the histological changes found in the appendix. The clinical reports are unsatisfactory on account of the various symptoms being treated so unequally that it is difficult to compare the cases under the different sections in any way adequately. It would have been a great improvement had a few tables been introduced, giving a *résumé* of the changes found in the various specimens, for, as the book stands, a great amount of time and trouble is expended in making cross references. It is unfortunate that in no case, as far as we can discover, has a complete bacteriological examination been made.

The Pocket Gray, or Anatomist's Vade Mecum. By the late EDWARD COTTERELL, F.R.C.S. Fifth Edition, Revised and Edited by C. H. FAGGE, F.R.C.S. London: Baillière, Tindall & Cox. 1901.

IN this edition "the only new departure is the addition of the action of each muscle to its description."

A work such as the present has, no doubt, its uses; it will certainly have users. As a method of learning anatomy it should be condemned; as a means of refreshing the memory it would be hard to beat. The approval of medical students is a small goal to aim at, but it appears to bulk largely on the horizon of the editor. He need have no doubt in the matter.

Operative Surgery. By JOSEPH D. BRYANT. Third Edition. Vol. II. London: Henry Kimpton. 1901.

THIS volume deals with the operations on the mouth, nose, and œsophagus; on the viscera connected with the peritoneum; the thorax and neck; the scrotum and penis; and "miscellaneous" operations, *e.g.*, for fracture of patella, opening of frontal and maxillary, sinuses, &c.

The high standard of the preceding part of the work has

been kept up in this, the concluding volume. The various abdominal operations are described with exactness and lucidity; the text is ably assisted by the many beautiful illustrations.

While, perhaps, too large for the use of the average medical student, we consider that this work will take a prominent place, and prove invaluable to those engaged in operative work.

Dental Surgery, including Special Anatomy and Pathology: A Manual for Students and Practitioners. By HENRY SEWILL, M.R.C.S., L.D.S. Eng. Fourth Edition. Edited by W. J. ENGLAND, L.D.S. Eng., and J. SEFTON SEWILL, L.R.C.P., M.R.C.S., L.D.S. Eng. London: Baillière, Tindall & Cox. 1901.

As expressed in the preface of the present edition of this work, the aim is "to supply all the information needed by the surgeon or practitioner of medicine, and to provide a solid foundation of knowledge for students intending to devote themselves to the practice of dental surgery."

As it is important that the dental student as well as the surgeon and physician should have an appropriate reciprocal knowledge of each other's sphere, this volume has an educational value that is wanting in ordinary text-books on dental surgery, but as two very different classes of readers have to be considered, the difficulty of the author's task is greatly increased. On the whole, however, they have been exceptionally fortunate in dealing with this difficulty, and have succeeded for the most part in keeping their labours abreast of the times.

The book, it may be pointed out, is not without some shortcomings. The opening sections on anatomy, histology, development and growth of the teeth and jaws, are not within the scope of the work as defined in the preface, and reference had better been made to text-books on these subjects where they are *adequately* treated upon. A more fitting introduction, and one which would have forcibly arrested the general practitioner's attention, would have been such remarks on the general principles of surgery as are applicable and applied to dental surgery, some of which may be found in the appendices of the present volume.

It should be pointed out that, in one respect at least, general medicine and dentistry form a contrast. Medicine has made its most efficient strides in a preventive direction, but curatively

it has gone haltingly, whereas dentistry has done the reverse. Whilst the surgical treatment of caries is wellnigh perfectly efficient, the disease itself is held to be on the increase. Much valuable analytical matter has recently appeared for the determination of the means that will prevent caries, and this is at present the most serious problem amongst the ablest dental practitioners. Curiously enough, the authors have not fully recognised or treated this problem in its present phase. They, however, point out that, in the absence of knowledge of parents, the necessity of the family doctor insisting that children—for caries is a disease of childhood—should be brought to the dentist at an early age.

Another point in which dentistry and medicine are obviously in touch, involving important definitive relationships, is in regard to the administration of anæsthetics. This subject ought not to be omitted in subsequent editions.

These various strictures have been made freely, because the merits of the book—so readable, so full, and so concise—can easily stand them.

Archives of Neurology and Psychopathology. Vol. III, Nos. 1 and 2. Utica: State Hospitals Press. 1901.

OVER 250 pages of this volume are devoted to a single monograph by Drs. B. Onuf and Joseph Collins, entitled "Experimental Researches on the Central Localisation of the Sympathetic, with a Critical Review of its Anatomy and Physiology." A little of the history of this monograph is told us in a footnote. Completed as early as May, 1897, it was sent to Paris and entered among the essays for the Lallemand prize of the Academy of Sciences. After much delay in connection with the awarding of the Academy prizes, the manuscript was accepted for publication in the present *Archives*, but fresh delay occurred owing to the Paris Academy retaining the original drawings, and thus necessitating the preparation of new illustrations. In this way, as the writers point out, the literature has been used only as it existed before May, 1897.

The essay is divided into four parts. The first is on the anatomy of the sympathetic system, and contains chapters (1) on the gangliated cords and their connections, the intermediate or central nerve plexuses, the peripheral plexuses, and the terminal monocellular ganglia; (2) on the anatomy of the gangliated cord; (3) on the anatomy of the plexuses; (4) on

the architecture and morphological organisation of the sympathetic; and (5) on its embryology and histology.

Part II is on the physiology of the sympathetic system, and contains chapters (1) on general facts and functional classification; (2) on the various kinds of secretory function; (3) on vascular functions; (4) on cardiac functions; (5) on respiratory functions; (6) on the influence of the sympathetic on involuntary automatic movements; (7) on trophic and tonic influences; (8) on reflex action in sympathetic ganglia; (9) on the functional interrelation of the sympathetic and cerebro-spinal systems; and (10) on the methods of physiological research on the sympathetic.

Part III treats of the localisation of the sympathetic, with chapters (1) on the structural interrelation of the cerebro-spinal and sympathetic systems; (2 to 10) on original experimental researches, with regard to the localisation of the sympathetic in the spinal cord and brain.

Part IV is on the pathology of the sympathetic. The first chapter is on the general rôle of the sympathetic in disease; the second, on various spinal and intracranial diseases in which the sympathetic is involved; the third, on traumatic lesions of the sympathetic; and the fourth, on the sympathetic in so-called functional diseases of the nervous system.

The essay is followed by a bibliography, an index, and a series of beautiful illustrative plates. The index slip is an admirable means of getting at any particular part of the work.

The outline of the contents, as given above, may convey an idea of the elaborate character of this monograph, and for those whom the sympathetic can still fascinate by the mystery of its origin, the complexity of its path, and the multiplicity of its connections, there is provided an immense wealth of valuable reading.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By G. H. EDINGTON, M.D.

Perforating Wounds of the Abdomen.—This paper is prefaced by a reference to that of Reclus and Nogués, published in the *Revue* in 1891. These authors advise laparotomy when there is (1) internal hæmorrhage;

(2) escape of gas or faecal matter; (3) when the traumatism is a violent shock, and especially a kick from a horse; and (4) when there exists peritoneal reaction. Reclus counsels abstention from operation in cases of revolver bullet wounds.

Another paper referred to was published at the same time by Wassiliev; he recognises the conservative surgery of Augagneur, who mentions three conditions menacing the life of the patient—(1) hæmorrhage, (2) shock, (3) peritonitis. In a general way the latter observer discountenances laparotomy, and the present writer (Vincent) agrees with him. Wassiliev's statistics show the mean death-rate in gunshot wounds as 63 per cent in cases operated upon, and 25 per cent when left alone. In wounds from cutting instruments the death-rate after laparotomy is 24 per cent, and without operation only 12 per cent. Morton's statistics of 234 cases of laparotomy show 96 successes = general death-rate of 59 per cent; mortality from gunshot wounds = 67 per cent; from cutting instruments = 39 per cent; and from contusions = 62 per cent.

Trélat, Berger, and others advocate early interference, before the onset of peritonitis, and they consider fifteen hours from the receipt of injury to be the limit within which useful intervention may be made.

Vincent does not believe in aphorisms, and, while recognising general rules, he applies them only after due consideration of the facts of the individual case. The general laws which he would formulate are:—

1. There is no *absolute* rule in abdominal any more than in other departments of surgery.

2. In gunshot wounds it is wise to abstain from hasty intervention because the possible lesions are *incertæ sedis*, the perforations may be too numerous to suture, and because peritoneal adhesions may be sufficient to close them.

3. In a kick from a horse laparotomy is mostly indicated, because the sources of hæmorrhage or the seats of lesions are or may be accessible to investigation which is not hurtful, and is sometimes useful.

4. In perforating wounds expectancy is probably more advantageous, along with local refrigeration, rest, diet, and opium. The intestines retreat easily before blunt, and even sharp, wounding agents.

5. In wounds by cutting instruments, "armed expectancy" is preferable when there are probably multiple perforations of intestine, while laparotomy is indicated when the perforation seems limited to a superficial and accessible region—stomach, intestine, liver, &c., with escape of gastric, intestinal, and biliary fluids.

On the other hand, laparotomy appears to be indicated when shock, collapse, or the situation of the wound point to the likelihood of severe internal hæmorrhage; also when localised peritonitis exists with probably encysted collection of fluid.

The author reports three cases:—

CASE I.—In an infant, aged 2 years 10 months, a knife had entered the stomach, passing downwards, superficial to the ribs, from a wound on the left side of the sternum at the level of the fifth costal cartilage. Perforation was considered not to exist, and local application of ice was employed. The following day, dressings were soiled with stomach contents. The wound was laid open on a grooved director. A pouch was found, below the margins of sixth, seventh, and eighth ribs, and containing solid food. On cleaning this sac the perforation in stomach-wall was disclosed; it was filled with prolapsed mucosa, but admitted the tip of the little finger. Although adhesions had formed, it was considered unwise to trust to them on account of the restlessness of the patient. The serosa of the stomach was stitched to the parietal peritoneum, and the perforation was closed by purse-string suture. The upper part of the cutaneous wound was closed; the lower part was packed with iodoform gauze. Seventeen days later the open part of the wound was closed with metal sutures. Three years later the child was reported as having remained well.

CASE II.—A boy, aged 13, in falling off a tree, was impaled on a wooden

railing. The piece broke off, and was extracted by his friends by means of pincers. It measured 45 cm. in length (18 inches), and had entered the abdomen above the middle of Poupart's ligament on the right side, passing in the direction of the loin. There was no evidence of perforation of intestine or bladder. Expectant treatment was adopted. Three days later there was some induration and tenderness in the right lumbar region. This was thought to be a collection of blood or a subperitoneal œdema. Incision in lumbar region showed perinephritic sero-sanguinolent effusion. The case pursued an uneventful course.

The bowel had evidently been pushed aside before the skin had been broken; the piece of wood had traversed the peritoneum, and sunk into posterior wall of abdomen at Petit's triangle.

CASE III.—A child, aged 2 years, received a wound in the epigastric region, to the left of the middle line, and at level of seventh costal cartilage. Through the opening prolapsed a piece of great omentum. The case was seen two days after the accident. There had been several abundant motions, but no melæna. The wound, which measured 3 cm. in length, was explored with director, but with negative result. The prolapsed piece of omentum was ligatured, and cut away with the thermo-cautery; the ligature, left long, served to maintain it at the wound, and so act as an obturator. Uninterrupted recovery ensued.

The author concludes that—

Laparotomy should not be the habitual rule in perforating wounds of the abdomen; cases may recover without operation.

One should remember that movable viscera tend to retreat before the penetrating body, and also that peritoneal adhesions are capable of warding off trouble.

The surgeon should guard himself from the "prurigo secandi."

He finally quotes Ollier:—"Ce n'est pas parce qu'on croit une opération inoffensive qu'on est en droit de la faire."—(*Revue de Chirurgie*, July, 1901.)

Rupture of the Quadriceps Tendon.—Rochet showed a patient, on whom he had operated for the above condition, to the Société de Chirurgie de Lyon. There was considerable retraction of the muscle, so that approximation was impossible. The treatment consisted in dividing the patella by a vertical saw-cut parallel to its anterior surface, shifting the fragment up towards the retracted muscle, and suturing it by osteo-fibrous tissue to the upper margin of the portion of bone left *in situ*. The tendon of the muscle was then sutured to the upper margin of the displaced fragment. In this way he had produced an elongated patella, which was hinged at the junction of the two fragments. The functional result was excellent, flexion to more than a right angle was possible, and complete extension could be made. A radiograph showed the continuity of the two fragments by a fibrous callus, which, while very firm, allowed mobility.

Vallas, in discussing this case, considered the result excellent, and believed that the patient would ultimately be better off than if it had been a case of suture for fracture of patella. In the latter case the callus tended to become elongated by traction, and by flexion over the condyles. Here, on the contrary, the callus was embedded in the thigh, and subjected to very little strain. One must not, however, lose sight of sudden injuries to which the lower limb was exposed.—(*Revue de Chirurgie*, July, 1901.)

Hydronephrotic Cyst (H. Fœrmée) in an Ectopic Kidney.—Bérard reported this case to the Société de Chirurgie de Lyon. The patient was a woman, aged 57. She had had, for many years, in the left iliac fossa, a movable painless swelling, of the size of a fist. Eight months ago she had an attack of violent colic, with diarrhœa and rigors. For last six months the swelling had increased in size. The diagnosis lay between multilocular ovarian cyst and cystic tumour of kidney; the absence of urinary trouble rendered the latter hypothesis less probable.

Median laparotomy showed retroperitoneal tumour of the kidney; incision of peritoneum and puncture with a large trocar evacuated 2 litres of watery fluid; the tumour was removed and the cavity packed. The patient was well in three weeks. Urine passed in twenty-four hours, 1,800 grm.

Examination of specimen showed the pelvis of the kidney, transformed into a thin-walled sac, encircled by the vessels. The renal tissue was distended and sclerosed (examined by Paviot), and the ureter was flattened and obliterated.

Hydronephrosis had occurred in an ectopic kidney (lumbo-iliac), and one could not say definitely whether the ectopia had been congenital or acquired. The abnormal situation of the sac had rendered the diagnosis very difficult; but even with a correct diagnosis the treatment would have been the same, and any attempt to preserve the kidney would have been impracticable and useless.

Chandalex considered that the presence of clear fluid in the sac showed that the kidney was functionally non-existent, and that conservative treatment of the organ was out of the question.—(*Revue de Chirurgie*, July, 1901.)

Salivary Calculus.—Salomon reports a case of large salivary calculus removed from Steno's duct.

The patient, a woman, aged 64, had suffered for thirty years from swelling in the left parotid region. For many years she had suffered from neuralgic pains coming on frequently and suddenly while at meals. The pain disappeared sometimes in the course of two or three hours, sometimes it lasted till the following day, or even for several days. In front of the parotid region externally there would appear a swelling, the size of a cherry stone. This swelling would gradually diminish, and disappear at the end of eight or ten days. About eight years ago she observed, at the anterior border of the masseter, a small hard nodule. Usually painless, this nodule seemed to set up very severe inflammatory outbreaks, terminating, always without suppuration, in a return to the habitual state. The swelling, which became gradually larger, seemed in the course of three or four years to move forwards, while sinking more deeply in the cheek. Three years ago an abscess formed, and opened spontaneously into the buccal cavity. Following this, the nodule made a projection in the mouth, remaining, nevertheless, sunk in the tissues. A series of abscesses ensued, discharging into the mouth, and the swelling projected farther after each abscess. In June, 1901, when Salomon first saw the patient, there was an enormous swelling of the parotid region. The jaws were fixed. On exploring the buccal *cul-de-sac*, he found a large abscess which extended into the submaxillary region. Opposite the second molar was a hard body, which gave him the impression of being an enormous tooth. It had a certain amount of mobility, the eliciting of which caused great pain. After some efforts he succeeded in extracting the body. The extraction was followed by a gush of pus, and now (July) she is almost well.

The body proved to be a calculus of large size, weighing 7·25 grm. Chemical examination by M. Soeure showed it to be composed mainly of tricalcic phosphate, with a small proportion of carbonate of lime.

The author considers the case of interest on the following grounds:—

1. The migration and formation of the calculus in the duct during thirty years.
2. The enormous weight and size (·07 cm. in circumference).
3. Its situation, and
4. Its occurrence in a woman—the relative frequency in women as compared with men being 18 to 80.—(*Le Progrès Médical*, 17th August, 1901.)

Spontaneous and Traumatic Ruptures of Hydrocele.—Mauclair and Vinsonneau, in reporting two cases, remark that rupture commonly occurs in the anterior part of the tunica.

Causation.—(a) Traumatism; (b) muscular effort; (c) insignificant causes (so-called "spontaneous").

The authors consider degeneration of the serous wall is one of the most important factors in the etiology of rupture, whether the latter be traumatic or spontaneous.

It is surprising that rupture is not more frequent; but probably many cases classed as parietal hæmatocele, from rupture of vaginal "hæmatocele," are really cases of rupture of hydrocele.

CASE I.—Right-sided hydrocele of nine months' duration, reaching present size in fifteen days. Patient aged 37. There had been no increase for twenty days previous to rupture. Without any warning, and while stooping to pick up a light package, he heard a dry crackling; on applying hand to scrotum, he found the part flaccid. There was no acute pain at the time, but later in the evening there was enough discomfort to cause him to seek the hospital. There was infiltration of the tissue of the scrotum, well-marked in front, and an area of hard thickening was felt at inferior part of the swelling. There was some tenderness on palpation.

CASE II.—Occurred in a patient aged 37. The hydrocele, which was on left side, had appeared two and a half years previously, and slowly increased in size during the first twelve months, after which it became stationary. Rupture took place after a slight traumatism while going to bed. It was accompanied by a crackling sound, and by a very distinct pain which lasted for several minutes. Next day he entered the hospital on account of pain. The appearances in the scrotum resembled those of urinary infiltration, and affected both sides.

The treatment adopted in both cases consisted in excision of the tunica, except posteriorly, where it was attached firmly to the scrotum.

There was in neither case any lesion of testicle or cord, but the tunica showed numerous small patches of cretification and of fatty degeneration.—(*Annales des Maladies des Organes Génito-Urinaires*, August, 1901).

Extra-Serous Transposition of the Testicle in the Treatment of Hydrocele and Varicocele.—Since January, 1898, Longuet has employed this method of treating hydroceles, ectopia testis, and cysts of the cord. He first published it in the *Presse Médicale*, of 31st October, 1900, and during the present year he has applied the method to the treatment of varicocele.

The principles involved are three in number:—(1) Transposition of the testicle from out its serous tunic; (2) utilisation of the serous tunic to form a sheath for the cord; (3) hæmostasis rendered unnecessary by avoidance of all subserous dissection (*décortication*).

The transposition may be internal, high, low, external, and, finally, trans-septal; the last three are only exceptionally required.

The author describes the internal transposition, which he considers the best for hydrocele.

1. Local anæsthesia with cocaine, according to the methods of Reclus, is the best for the great majority of cases.

2. Instruments—scissors, fixation forceps, and needle.

3. Operation: (a) *Vaginotomy*.—No matter what size the hydrocele be, the incision should not exceed 5 cm. (2 in.), sufficient to allow delivery of the testicle. A transverse fold of scrotum is pinched up, and cut with the scissors in vertical direction; if necessary, the incision is enlarged. The centre of the incision is deepened by successive snips till the tunica is opened. During the evacuation of the contained fluid the edges of the tunica are caught in forceps, and the cellular tissue is opened up above and below, with closed points of scissors, to the whole length of the cutaneous wound. This manipulation avoids hæmorrhage. The aperture in the tunica is then enlarged by cutting with the scissors, avoiding the fine vessels coursing on its outer surface.

(b) *Sheathing of the cord after temporary luxation of the testicle.*—The testicle is either pulled out directly or squeezed out by pinching the scrotum behind it. In this way the serous tunic and all the subjacent envelopes, save the

skin, open up and then come together behind the cord, which they thus sheath. A suture fixes the edges of the tunica, &c., in their new position. This suture leaves lowest third of the edges of the tunica free.

(c) *Transposition of the testicle and cutaneous suture.*—It is necessary to form a space of just sufficient dimensions to contain the testicle and the sheathed cord. This space is made, under inner lip of cutaneous wound, by introducing the index fingers back to back and separating them; this procedure is unaccompanied by bleeding. The testicle is then rotated inwards on its long axis into this cavity, and lies against the septum of the scrotum, the cord covered with tunica lying in front, and forming an anterior mesorchium. The skin wound is then straightened out with fixation forceps, and an overcasting suture inserted.

The immediate effect is so insignificant that the patient may return home in an hour or two without feeling any pain. With practice the operation should not exceed two minutes. Two days later the skin suture is removed.

For *varicocele*, transposition is made upwards. This overcomes the ptosis of the testicle, while the firm sheathing of the cord supports the veins.—(*Le Progrès Médical*, 21st September, 1901.)

Teratoma of Testicle showing Extensive Perithelial Angio-Sarcomatous Growth.—No clinical history is given. There were adhesions between visceral and parietal layers of tunica at its upper extremity, the adhesions consisting of fibrous tissue, partly necrotic. Projecting from surface of testicle were two dome-shaped excrescences, bluish in appearance and of soft texture, and adjacent to the larger of these was an elevated yellow nodule, situated in the tunica albuginea. This had been hidden by the adhesions, and was evidently a small mass of tumour growing through the tunica. The testicle was laid open, and was found to consist entirely of firm, semi-translucent, grey material, with occasional hæmorrhages. The dome-shaped masses consisted of a network of vessels. Microscopically, tumour consisted, for most part, of perivascular growth; in places, of dense connective tissue, cartilage, and epithelial structures. Around the smaller vessels were grouped epithelioid cells in several layers; around the larger vessels the grouping was more irregular, forming in places papillomatous processes. The anastomosis of the smaller vessels produced an appearance of a glandular structure. The epithelioid cells varied in shape and size, being columnar, cuboidal, or polygonal. Very many karyokinetic figures were found.

Elsewhere in the tumour there were found hyaline cartilage, embedded in dense connective tissue, and cyst-like cavities lined with stratified epithelium, and filled with desquamated cells. Epididymis tubules and structures like adrenal cortex were also present.—(Hendrickson, *University of Pennsylvania Medical Bulletin*, August, 1901.)

Adenocarcinoma originating in a Teratoma.—The condition was observed in a negro, aged 56, the subject of a swelling in the sacro-coccygeal region of congenital origin. It had latterly given rise to considerable pain and inconvenience, interfering with sitting, &c.

The growth measured 7 in. vertically and 5 in. transversely, and there was no induration in the surrounding tissues. At two points fluctuation was felt, and here the skin was somewhat inflamed. The rectum was not displaced, nor was there any intrapelvic growth; but there was some involvement of tissue at lower end of coccyx, and that bone could not be made out posteriorly. An attempt was made to remove the tumour, but this was found to be impossible owing to deep infiltration, and only a partial operation was done.

Recurrence took place in two weeks; it grew rapidly, infiltrating the buttocks and also so filled the pelvis as to close the rectum. The patient died four months after operation.

In the deeper part of the tumour were numerous cartilaginous rings; below this was solid tissue. The more superficial parts of the growth showed cystic formations.

Microscopic examination of the trachea-like body shows the cartilaginous rings to be formed each of several pieces of cartilage, with intervening soft tissue. There was a well-formed mucous membrane with ciliated epithelium, and the submucous tissue contained numerous glands.

In the tissue between the segments of the cartilaginous rings the submucous glands were irregular in outline and enlarged; the cells filled the lumen, or broke through the basement membrane and formed adenocarcinomatous growths.

From a superficial examination of the subject, it would appear that malignancy does not occur any more frequently in teratoma than in normal organs or tissues; the age at which it appears in teratoma corresponds pretty closely to the age in the normal individual.

It would appear to be good surgical practice to remove all teratoid formations, where this could be done without danger to life, wherever they appear, and so obviate the danger of malignancy.

The paper is illustrated by plates and by references to the literature of the subject.—(Wm. H. Hudson in *Johns Hopkins Hospital Reports*, vol. ix, 1900.)

Ischæmic Paralysis.—The following is a summary of two cases of this affection:—

1. A girl, aged 20, underwent osteotomy of radius for congenital absence of superior radio-ulnar articulation. The operation lasted for one hour and a quarter, and during this time hæmorrhage was controlled by an Esmarch's band placed on the upper arm. The osteotomy was followed by forcible supination, and the limb put up in splints. Twenty-four hours later the arm was much swollen, red, and covered in places with bullæ. Body temperature was raised. Paralysis and loss of sensation seemed complete. Some stitches were taken out, and the swelling went down without suppuration; but paralysis continued, and fingers assumed position of "*main en griffe*." Ten days later, paralysis was confined mainly to median and ulnar nerves. Twelve months after the original operation, tendon-lengthening was done through a median incision. The tendon-sheaths were much thickened. All the tendons were cut, save those of the flexor carpi ulnaris and longus pollicis.

The author thinks that when the band was removed from the upper arm there was an extravasation of serum and fibrous tissue-forming elements. This, mixing with muscle-fibres, led to subsequent contraction. The extravasation also caused paralysis by affecting the terminal nerve-plates in the muscles. Operation for tendon-lengthening should be delayed for at least three to four months, so as to allow for improvement in condition and for maximum contraction to have taken place.

A small stream of sterilised warm water, with or without the addition of hazeline, may be played over the wound during operation as a substitute for the elastic band.—(F. C. Wallis, *The Practitioner*, October, 1901.)

2. This case occurred in a man, aged 18, who shot himself with a revolver in the heart region. No wound of exit was found. Absence of right radial pulse was noted. Movements of right elbow were normal, but the hand- and finger-joints were moved only on making slight dorsal flexion of the hand. The muscles of the right fore-arm were swollen, hard, and very tender, and there was slight cyanosis of hand and fore-arm. Attempts at passive movements of fingers elicited great pain in upper arm. Sensation diminished in areas supplied by the three nerves of fore-arm and hand. A resistant body in the depths of the right axilla, in the line of the artery, was shown by x-rays to be the bullet. Movements improved a little, and sensation returned to normal in fore-arm, but remained diminished in hand, and especially in fingers.

The bullet had probably made a partial wound of vessel-wall, leading to thrombosis. Perforation and hæmorrhage had not occurred. Extraction was not indicated. In the discussion on this case, Pick mentioned the rarity of continuance of loss of sensation in ischæmic paralysis.—(Schloffer, *Centralbl. f. Chir.*, No. 39, 1901.)

DISEASES OF THE SKIN.

By W. R. JACK, M.D., B.Sc.

Action of Arsenic on the Skin.—The recent epidemic of arsenical poisoning has given Brooke and Roberts (*British Journal of Dermatology*, April, 1901) the opportunity for a close study of the action of arsenic on the skin, which can only be briefly summarised here. The usual phenomena were swelling, heat, and pain in the hands and feet, which were reddened. The skin of the palms and soles was thickened, there was numbness or hyperæsthesia, and often hyperidrosis. The lesions spread further, involving the wrists, &c. The face was sometimes swollen, and the eyes watery. On the body and limbs scarlatiniform rashes or diffuse erythrodermia appeared, to be followed by desquamation and a dirty discolouration. Sometimes bright red or livid erythematous blotches covered the trunk and limbs. The hands and feet were usually affected first, but sometimes this was preceded by desquamation and deep pigmentation of the trunk. There were usually itching and slight symptoms of peripheral neuritis. The hyperkeratosis and pigmentation were often marked by the phenomena of erythema, and closely associated with nervous phenomena. General symptoms were usually slight—diarrhoea, gastric pain, and smarting of the conjunctivæ notably so. When the erythema was extensive, nervous symptoms were only slightly marked, and *vice versa*. Herpes was not common.

The authors divide the symptoms into those due to the action of the poison (1) on vasomotor centres, (2) on nerve trunks or terminations, (3) on the nutrition of the skin and other tissues, (4) on the blood and blood-forming organs.

To class (1) belong the erythemata, either diffuse, often evanescent, mixed with urticarial elements, and usually heralding general desquamation, or circumscribed, papular, confined mainly to the limbs, resembling chilblains when discrete, and erythema multiforme when grouped. The circumscribed lesions were sometimes large. They ended in desquamation, with little pigmentation. The patches were sometimes covered with papules or vesicles.

In class (2) (affection of nerve trunks) herpes was the most prominent eruption. It was sometimes abortive, invariably unilateral, and never occurred when the erythemata were well marked, being essentially a symptom of the nerve cases. Pemphigoid eruptions were rare. Hyperidrosis was frequent, although in most cases slight, and mainly affected the palms and soles.

These angioneurotic lesions in classes (1) and (2) are to be regarded as collateral effects of arsenic, some of them being invariably present. But lowered blood-pressure, relaxed vaso-muscular tonus, and retarded peripheral circulation were persistent.

(3) In the nutritive (non-inflammatory) group pigmentation was present both in the nervous and cutaneous type of case. It varied much in intensity, and was deepest on the covered parts. The tint in contiguous areas varied much. It was not necessarily, though usually, associated with hyperkeratosis, most marked on the palms and soles, exaggerating the surface markings, and leading to the development of arsenical "warts." Hyperæmia was not essential to the production of hyperkeratosis. The nails were occasionally affected, but no change was noted in the condition of the hair. Desquamation was most pronounced on the chest and abdomen, being there of the squamous type, while on the limbs it was furfuraceous. From the amount of arsenic found in the scales, it may be regarded as a prolonged eliminative process. Hyperkeratosis was frequently increased at the sites of the erythematous eruptions, and produced appearances resembling seborrhœic dermatitis, psoriasis, &c.

Histologically the early stages of the cutaneous lesions show hypertrophy

of the rete, the granular layer and stratum lucidum being pronounced, enlargement of the sweat-gland cells, the corium unaltered, and the vessels congested. This hypertrophy gives place to atrophy and degenerative changes in the rete, while the stratum granulosum and stratum lucidum remain hypertrophied, and the horny layer becomes markedly hypertrophied (hyperkeratosis). In the final stages the rete is almost absent, as is the granular layer, while the stratum lucidum is present, with horny cells loosely adhering to it. Pigment is found all through the epithelium, but only in small quantity in the cutis. It is probably formed in the epithelial cells.

The arsenic was probably present in the beer in the form of arsenic acid and the arsenates. As these are less irritating to the intestinal mucous membrane than arsenites, the frequent absence of gastro-enteric symptoms is explained. It has been shown that the intestinal mucous membrane converts arsenious acid at the expense of the tissues into arsenic acid, and reduces the latter to arsenious acid. The hypothesis is that the effects of arsenic on the animal tissues result from the development of active oxygen. The authors ask whether the development of ozone within the tissues of the skin is the direct cause of the morbid changes. They show that the epithelium has an extraordinary affinity for arsenic, and that the essential changes produced in it are not inflammatory but nutritive. In the early stages the epithelial tissue presents almost a condition of wellbeing, later, degenerative changes appear, passing later still into atrophy. The oxidation hypothesis is the best explanation, the cells having been stimulated by a normal physiological stimulus (oxygen) to the point of exhaustion, and beyond their reparative power. Further, the epithelia of the sebaceous glands remain healthy, and the oxides of arsenic have been shown to undergo no change in the presence of fat. A skin permeated with arsenic shows marked irregularity in the effects of the poison, the more highly organised and more irritable cells being first affected, and epithelium already irritated responding more quickly than non-irritated epithelium. The relation of arsenic to the tissues, therefore, is determined by the cells themselves. If they decompose the oxide, liberating oxygen, or part with oxygen to the arsenious acid (the respiratory property of arsenious acid), the therapeutic or toxicological effects of arsenic are obtained. When the liberation of oxygen is slow, a formative tendency results; if it be unduly rapid, the cells are hurried to exhaustion and death. The recent epidemic thus supports the view that the effects of arsenic are due to the development of active oxygen within the system. Its action is thus entirely dynamic, and consists in altering the ratio of oxygen to the tissues.

Severe Forms of the Mercurial Exanthem.—In Berliner's paper on this subject he states that all possible acute inflammatory conditions of the skin may occur in the course of mercurial treatment, but that all have three characteristic symptoms—erythema, moisture, and desquamation. They may give rise to severe disturbance of the general condition. They do not always disappear shortly after the cessation of the drug, but may be obstinately persistent in the case of congenital or acquired idiosyncrasy. Of the latter, anaemia is the main determining factor, and cases of severe exanthemata are more frequent in women. Those cases are to be regarded as congenital idiosyncrasies where, without obvious cause, healthy persons prove exceptionally susceptible to small doses. He quotes the following case:—

A woman, aged 42, previously quite healthy, complained of headache in May, 1898, and some weeks later a papular eruption appeared on the body. Inunction was practised, and in all 30 grm. (= 1 oz. roughly) of mercurial ointment was used in ten days. After the first rubbings an eruption appeared on the legs, and spread over the body in spite of the cessation of treatment. The mucous membrane of the mouth became affected, and she was admitted to hospital on 14th July. There were no obvious signs of syphilis. The face was swollen, cedematous, bluish-black, and covered with small scales. There were thick crusts, and between them deep fissures in the nasolabial folds and on the ears. The scalp was reddened. There was marked gingivitis, and the

upper central incisors had fallen out. There were extensive conjunctival hæmorrhages. The trunk and extremities were bluish-red, the appearance being produced by numerous petechiæ surrounding the follicles, while the intervening skin was reddened. There was brawny desquamation, and here and there the epidermis was detached in lamellæ. The backs of the hands and feet, and the fore-arms, were covered with large flat bullæ, some of which had burst, and caused profuse leeting. The backs of the feet were almost black. The temperature was 102° F. The urine contained hyaline, granular, and epithelial casts, and bile pigment; no mercury was present in it. There was moderate diarrhœa. Next day there were moist râles at both bases, and the bullæ were even more numerous. The temperature gradually fell below normal, and signs of cardiac failure appeared. Under camphor injections, &c., improvement took place, and in the course of ten days the bullæ had dried up, and the skin was no longer œdematous. Numerous boils appeared on the axillæ, and a large abscess over the left deltoid. The inflammatory appearances gradually subsided, but persistent pruritus and brown pigmentation were present when the patient left the hospital. A year afterwards there was still well-marked pigmentation over the breast and lower part of the back, but she was otherwise perfectly well.

The onset of the pneumonia, which was doubtless produced by the entry of pyogenic organisms from the bullæ into the circulation, threatened the patient's life. It is interesting that such severe symptoms were excited by such a small quantity of mercury. They could not be referred to a cumulative action on the skin, nor to a predisposition due to age or constitutional defect, as the woman was absolutely healthy till the beginning of the "cure." Only a few such cases of pure idiosyncrasy are to be found in the literature. They are to be explained on the theory of a reflex action upon the vasomotor ganglia.

The most peculiar feature of the case is the universal distribution of the capillary hæmorrhages, which, like the pneumonia, were probably of septic origin, and thus only indirectly the result of the absorption of mercury. There was no retinal or renal hæmorrhage.

In order to prevent such serious results of inunction, it should be used very carefully in those of delicate constitution, and patients should be warned to stop as soon as redness of the skin is noted to be extending beyond the seat of the application, for not only bullous, but also scarlatinoid exanthemata may be attended with danger to life. It may be necessary to give mercury on account of malignant syphilis even where idiosyncrasy is known to exist. In such cases, as the exanthemata are less severe after internal than external or subcutaneous administration, it should be given in pill or in very small doses to begin with, these being afterwards gradually increased.—(*Dermatolog. Zeitschrift*, February, 1901.)

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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 19TH OCTOBER, 1901.**

	WEEK ENDING			
	Sept. 23.	Oct. 5.	Oct. 12.	Oct. 19.
Mean temperature, . . .	58·4°	53·6°	50·1°	48·7°
Mean range of temperature between day and night, . .	12·9°	12·3°	13·8°	11·3°
Number of days on which rain fell, ...	5	7	5	5
Amount of rainfall, . . ins.	0·72	1·77	0·55	1·67
Deaths registered, . . .	232	219	243	267
Death-rates, ...	15·8	14·9	16·5	18·2
Zymotic death-rates, . . .	2·9	3·0	2·1	2·9
Pulmonary death-rates, . .	4·2	3·5	4·3	4·8
DEATHS—				
Under 1 year, ...	61	59	52	61
60 years and upwards, . .	45	32	42	46
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	11	12	5	14
Scarlet fever, ...	3	5	2	2
Diphtheria, ...	1	3	2	7
Whooping-cough, ...	3	5	..	8
Fever, ...	2	3	4	1
Diarrhoea, ...	22	16	18	11
Croup and laryngitis, . .	...	1	...	...
Bronchitis, pneumonia, and pleurisy, ...	51	30	41	51
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Diphtheria and membranous croup, ...	14	13	12	5
Erysipelas, ...	33	20	33	26
Scarlet fever, ...	114	71	67	101
Typhus fever, ...	...	1	...	...
Enteric fever, ...	48	25	25	29
Continued fever, ...	...	...	...	...
Puerperal fever, ...	...	2	2	2
Measles,*	172	208	239	288

* Measles is not notifiable.

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ORIGINAL ARTICLES.

PURPURA HÆMORRHAGICA IN A CASE OF VOMITING
OF PREGNANCY.¹

By ROBERT JARDINE, M.D., F.R.S.E.,

President of the Glasgow Obstetrical and Gynæcological Society ; Senior
Physician to the Glasgow Maternity Hospital.

Mrs. W., æt. 19, was admitted to the Glasgow Maternity Hospital on 14th June, 1901, suffering from persistent vomiting, which had first commenced in January, but had been much more severe since the latter end of May. She stated that she had rejected everything except a little water since about 28th May. She considered herself in the seventh month of pregnancy. Her health previous to this pregnancy had been excellent. She had had two abortions, one nearly four years ago, and the second in July, 1900. They had both been about the third month. She could give no cause for them.

On admission, she looked collapsed, sallow, and emaciated. Judging from her rings, her fingers were much thinner than formerly. Her pulse was about 120, regular, and of fairly good tension; temperature, 99°. The heart sounds were normal, and the fetal heart could be distinctly heard. The abdomen was not much distended. The fundus was slightly above the umbilicus. There was no œdema of the legs. The

¹ Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 23rd October, 1901.

urine was very scanty, dark coloured, muddy, with a peculiar sweetish odour. It contained distinct trace of albumen, pus cells, epithelial *débris*, and some granular tube-casts.

A sip or two of egg-flip and brandy was given, but it was immediately rejected. Rectal feeding with milk, brandy, and beef-peptonoids was at once commenced. The enemata were retained. Next day she was given 10 grs. of oxalate of cerium and 15 grs. of bismuth subnitrate three times, but she rejected the first two doses. As she was excreting very little urine, 25 oz. of saline solution were infused under the right breast. That evening her temperature, which had been subnormal since the day after admission, rose to 101.4° , but fell to 97.8° next morning. On the evening of the 18th, it rose to 103° , but it quickly fell to normal again. By the 19th she had improved considerably. The sickness had nearly ceased, and she was able to take imperial drink, milk and lime water, and brandy and ice by the mouth and retain it. The foetal heart sounds could not be heard.

On the 20th, a distinct rash began to appear about the extensor surfaces of the elbows, hips, and knees. It quickly became purpuric and general in character. The gums, also, began to bleed readily. Hæmatemesis began on the evening of the 21st, and feeding by the mouth was stopped. The pulse became much weaker, and tremor of the hands was noticed. Her face became cyanosed, and she appeared to be drowsy.

Dr. Carstairs Douglas tested the coagulability of the blood, and found that the time was ten and a half minutes. This is about double the ordinary time. He found urobilin in the urine. She was now put on suprarenal tabloids, 5 grs., three times a day.

23rd June.—Hæmatemesis occurred twice during the night. Hypodermic injections of 5 minims. of liq. strychn. were given every six hours.

24th June.—To-day there was a slight vaginal discharge, and on examination the os was found partially dilated. Labour was going on, but the patient maintained that she felt no pain. She, however, felt the vaginal examination. In a few hours a dead foetus was delivered by the breech.

There was no post-partum hæmorrhage, but as a preventative an intra-uterine douche of 2 pints of water, containing 30 grs. suprarenal extract to the pint, was given, and a hypodermic of ergotin and strychnine. Two pints of saline solution were infused into the abdominal wall. The pulse was very feeble and rapid. The foetus did not show any eruption, and there were no hæmorrhages into the placenta.

25th June.—Vomiting has recurred several times; hiccough at intervals; pulse almost imperceptible. She lies with half-closed eyes, but when spoken to says that she feels much better. The rash has faded very much. Muscular tremor is very marked. Strychnine injections have been stopped, and ether used instead. She died at 10.45 P.M. From the last hour she was unconscious, and the breathing was Cheyne-Stokes in character.

We were fortunately able to obtain a *post-mortem* examination. Dr. Carstairs Douglas reports as follows:—

“Body fairly nourished; sallow and jaundiced tint of skin. Rigor mortis gone in arms, present in legs. Pupils equally dilated.

“On reflecting the skin, the tissues were found to be very dry. Fair amount of subcutaneous fat.

“*Thorax*.—Heart covered all over anterior aspect with fat; pericardium normal. Moderate amount of dark fluid blood in right side. Every chamber occupied by *ante-mortem* firm, pale clot, extending up into aorta and pulmonary artery. Left lung very distinctly emphysematous. Right lung emphysematous in upper lobe, solidified in lower lobe.

“*Abdomen*.—Stomach distended with gas, and containing about 10 oz. of black fluid (blood). Mucous membrane greenish-yellow in colour, and a few small pinkish spots seen here and there. No ulceration. Gullet and duodenum contained similar material, but no ulcers or bleeding points. Liver large, firm and heavy. Slight degree of nutmeg changes; gall-bladder distended. A subsequent examination of the liver and kidneys gave evidence of a deposit of iron similar to that seen in pernicious anæmia.

“Spleen small; normal.

“Pancreas small; normal.

“Left kidney fairly normal; some small bluish-black points in surface of cortex, and old hæmorrhages. Cortex pale; medulla normal. Left suprarenal appeared normal. Right kidney has an abscess in its pelvis containing thick, yellow pus. The abscess burrows to a moderate extent into the substance of the organ. Suprarenal appears normal.

“Bladder contains a little brownish urine; surface normal.

“Tubes and ovaries healthy. Corpus luteum on the right side.

“Uterus well contracted; wall pale and thick; decidua entirely away; a little blood-clot present.”

We were in hopes that the *post-mortem* examination would

throw some light on the condition, but, with the exception of the abscess in the kidney, everything seemed to be fairly normal. I don't think this abscess had anything to do with the condition. I was very much struck with the amount of subcutaneous fat, and especially with the large amount about the heart. Considering that she had had practically no food for some weeks, this was very remarkable.

Before discussing the purpuric condition, I shall say a few words about the vomiting. Uncontrollable vomiting of pregnancy is fortunately a rare disease, but when it does occur it is one of the most difficult complications one can have to deal with. When medicinal treatment fails, induction of labour is usually resorted to. I am afraid that the tendency is usually to delay too long before resorting to this. Our results in the hospital have not been very brilliant, because the patients have too often been so far reduced that they sank from exhaustion after delivery. In this case, the woman was so weak that I considered she would stand a better chance if we could first strengthen her up a bit by rectal alimentation. She certainly improved, but on the appearance of the purpura she rapidly grew worse, and I then felt that induction would hasten the end. After labour, which came on of itself, she sank very quickly. The painlessness of the labour is interesting. This may have been due to the action of the suprarenal tabloids, but this is only a supposition.

Some years ago I had a somewhat similar case of painless labour in a woman who was admitted for vomiting. She had had very severe hæmatemesis several times before admission, and was much reduced. As there was no recurrence of the vomiting after admission, we did not induce labour. On the second day, a seventh month foetus was expelled with the membranes intact. The patient, a multipara, never knew that she was in labour until the foetus was passing through the vaginal outlet. It was the same in this case. The uterine contractions were painless, and yet the patient felt pain from the examining finger, and also when the foetus was being expelled. At the *post-mortem* examination, the stomach was found not to be ulcerated, although she had had severe hæmatemesis several times.

The literature of purpura hæmorrhagica is very extensive, but comparatively few cases have been recorded in connection with pregnancy. In his text-book on *Midwifery*, Hirst says—"Purpura hæmorrhagica is apt to be rapidly fatal in pregnancy, which it always interrupts. The disease usually

destroys the foetus before it is expelled. The maternal death may be due to post-partum hæmorrhage or to sepsis." Müller, in his *Handbuch der Geburtshülfe* (vol. ii), says—"Purpura hæmorrhagica occurs as a rare but comparatively dangerous complication of pregnancy, occurring at any time during pregnancy, and lasting for varying periods. Generally, it continues till the end of gestation without interrupting the same. Bleeding from the genital tract is not reported in such cases, but they may be brought so low by bleeding from the gums, nose, and urinary organs, that at the time of labour they have practically no further hæmorrhage from the genital canal. A case of this kind is reported by Labfeldt from Frerich's clinic. But it may lead to metrorrhagia in the puerperium, which may have a fatal termination. The disease, indeed, may first develop in the puerperium. The observation of Dohrn is of interest, which reveals that the disease can be handed from the mother to the foetus. Although after delivery all signs of the disease left the mother, they showed themselves distinctly in the child, especially in the form of blood extravasations, which, however, disappeared at the eighth day. A similar case is reported by Lingen. Whether pregnancy or the puerperium form the cause of the disease, it is impossible to say for want of observation."

Most of the other authors are silent on the point. Barnes seems to have reported a case about 1869, but I have not been able to find the record. In 1886, Phillips, of London, reported two fatal cases recorded by Peuch, and one of his own which recovered. One of Peuch's cases died of post-partum hæmorrhage. A careful perusal of Phillips' case gives me the impression that it may have been a case of scurvy. Curiously enough, I had a case of scurvy in the hospital a few weeks before Mrs. W. was admitted. The woman had been on starvation diet for some time. Her gums were very spongy and bled profusely, and she had a few subcutaneous hæmorrhages. A liberal diet soon cured her. The child showed no trace of the disease, but it died in a day or two. Cases of this kind are not very uncommon in a large city like Glasgow, but these are not cases of purpura hæmorrhagica.

You will notice that Hirst says pregnancy is always interrupted, while Müller states the very opposite. I agree with Hirst. In all the cases referred to by Phillips pregnancy was interrupted. I am inclined to think that cases of scurvy have been confounded with purpura hæmorrhagica, and if this is true it would account for the difference of opinion as regards results.

The disease is one of the blood, and I do not think that pregnancy has anything to do with the cause. As a matter of fact, the increased amount of fibrin in the blood should act as a preventative, and this probably accounts for its infrequency in pregnancy. Dr. Douglas' observation on the coagulation time is very important. In Fagge's *Medicine* it is stated that "it [the blood] has been said to be deficient in coagulating power, but this seems to be a mistake." In the present case there certainly was a very marked deficiency. I regret that a second observation was not made after the patient had been taking suprarenal extract for a few days. We had arranged for this, but unfortunately Dr. Douglas was unable to do it in time.

As regards treatment, arsenic is undoubtedly of great use in ordinary cases. The condition of the stomach in this case was against any medicines doing much good. I tried the suprarenal extract. The purpuric condition certainly improved very much, as the rash had almost entirely disappeared. Post-partum hæmorrhage seems to have been very common in other cases. In one of Peuch's, it was the direct cause of death, and in the other the uterus filled with clot after delivery. In my case there was no bleeding at all. Whether or not this was due to the action of the suprarenal extract, it is, of course, impossible to say.

I am indebted to my resident, Dr. Robin, for the careful notes of the case, and also to Dr. Carstairs Douglas, for his valuable assistance in investigating the case and looking up the literature of the subject.

CASE OF PERIPHERAL THROMBOSIS AND CARDIO-PULMONARY EMBOLISM TREATED BY LARGE DOSES OF AMMONIA.¹

By R. O. ADAMSON, M.A., M.D.

THE patient was a male, aged 70, of large frame, healthy and vigorous for his years. He was accustomed to long walks, and took a good deal of exercise for a man of his age. Four days prior to the onset of his illness, he had sat on the top of

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 18th October, 1901.

a car after running hard to reach it, and thought he might have got chilled thereby. The next day he had felt the calf of his right leg sore and stiff, a symptom which he thought little of, ascribed to "rheumatism," and, as it continued, treated by bathing the leg in hot water and wrapping it in flannel. At about 2 A.M. on the morning of 8th October, 1900, he awakened from sleep feeling breathless and faint. Some whisky was given to him, the feeling soon passed off, and he slept again, but kept his bed that day and sent for me. He then said he felt perfectly well, except for a slight "catching" sensation in his left side, but assured me he had felt very distinctly breathless and faint during the night.

On examination, I felt his pulse to be 66 per minute, regular, full, tension moderate, and the arterial walls showed some degeneration. The temperature was 99° F. The tongue was clean, and he had no appearance of illness. He spoke, and moved about freely in bed without any discomfort or breathlessness.

The apex of the heart was located about the normal site, and the sounds were pure. The right side of the heart was possibly extended to a slightly greater degree than normal beyond the right border of the sternum. There was a feeling of tenderness complained of on pressure along the left sixth interspace, for some inches in front, and he felt a "catchy" sensation there.

Nothing abnormal was detected in the lungs or pleuræ, nor in the abdominal organs.

He was kept in bed under observation and simple treatment. At night he had still pain in the left side, and was anxious. The pulse was as before; temperature, 99·4°. At the lowest part of the left base, a few fine inspiratory râles were heard. I did not see him till next morning, when he told me that again during the night he had felt breathless and uncomfortable, with a nasty "catching" in his side, and a throbbing about the heart. Whisky had given him some relief, but he had spent a bad night, and now felt that any exertion made him breathless. He had had no cough, faintness, sickness, or pain other than as before mentioned. But now I found a very striking change in his appearance. His lips, ears, cheeks, and finger-nails, were cyanotic, and the least exertion caused great dyspnoea. If he lay quiet he was not distressed, though manifestly breathless. He complained of a disagreeable fluttering and throbbing in the left side, and of involuntary deep respirations that caused a "catching" feeling and pain in the left mammary region. The pulse was as formerly, and 64 to the minute; temperature, 99·4°. The right border of the heart was located by percussion

at about 1 inch from the right sternal margin—much as it had been before. The apex beat was judged to be about the normal site. There was heard at the apex a soft systolic murmur, which between the apex and the tricuspid area became harsher, slightly musical and blowing, not much prolonged, and rather distant. There were no diastolic murmurs. There were tenderness and fulness in the epigastrium and under the left hypochondrium. There was thought to be a slight general impairment of percussion over the left lung. The breath sounds were in all parts vesicular, and there were heard no pleural or pulmonary accompaniments. The legs were now examined, and the following condition found:—The right calf looked swollen, and the skin tightly drawn over it, and measured half an inch more than the left. There was pitting on pressure, slightly, down the tibia, and some tenderness on pressure. There were no varicose veins visible. The left calf was normal.

The urine showed a copious deposit of uric acid crystals, and a slight trace of albumen.

Here, therefore, we had to deal with marked cyanosis and severe cardiac dyspnoea of sudden origin, with no disease of the cardiac valves to account for it, and, so far as the cardiac muscle and cavities were concerned, evidence of probably a slight dilatation only of the right ventricle. But some condition had suddenly arisen to cause the systolic murmur mentioned. There was nothing pointing to intra-thoracic aneurysm or tumour. The lungs and pleural cavities afforded no clue. But the state of the right leg had also to be explained. There being no œdema of the left leg, it was clearly not induced by any cardiac incompetency, and the history given pointed to it being primary to the cardiac symptoms. The œdema, the fulness and tenderness of the leg and general appearance of it, indicated thrombosis of one or more of the deeper veins.

The cardiac symptoms were therefore to be accounted for by either—

- (1) A coincident thrombosis in the pulmonary arteries; or
- (2) The detachment of an embolus from the leg, or more than one embolus at different times, the plug being arrested partly in the heart, or in the pulmonary artery at no great distance from the heart; or
- (3) The carriage of a detached embolus into the pulmonary artery, with secondary thrombosis spreading from it towards the heart.

It was to this last hypothesis that my mind inclined.

The most absolute rest in bed, with efficient nursing, was secured, and he was ordered to have half-drachm doses of sal volatile in a spirituous vehicle every hour. In the evening, impaired percussion over the left lung generally was again noticed, and at both bases a few inspiratory râles were heard. The pulse was unchanged; temperature, 99.6°

Next day, 10th October, there were numerous râles at the left base, but any thorough examination was impossible, owing to the extreme dyspnoea and cyanosis present, and so increased by the least movement. These symptoms were exceedingly alarming. The pulse was hesitating at times, 64 to 66 to the minute, full, but soft.

During the next two days his condition seemed desperate. More than once, on his making some slight movement to ease himself, he grew so livid and so gasped for breath that a fatal issue seemed imminent. Whisky usually helped him then, and during those days the sal volatile had been stopped, and 2½ minims of liquor ammoniæ fortis in 7½ spirits of chloroform given every hour. The dose of strong ammonia was soon doubled as it seemed to do good.

The cardiac murmur was noted to be heard best at the tricuspid area and upwards from there to the pulmonary area, systolic in time, increasing in intensity towards its close, more prolonged, and slightly musical.

On the night of the 11th, nepenthe (10 minims) gave him some ease, and he slept fairly well. He took fluid nutriment readily. He was rather improved on the 13th, and coughed up some bright blood. At that time he became intensely livid and breathless, the nurse thinking death must occur. He now took 6 minims of strong ammonia, 2 minims of strophanthus, and 1 minim of liq. strychniæ in spt. chloroformi and tinc. aurantii each second hour. On the 14th, he occasionally brought up more easily dark bloody sputum.

As showing the condition he had been in, I may say that only then did we venture to introduce an air cushion under his body, he having lain continuously on a firm straw *palliasse* (being a gentleman of hardy habits), from which it had been too dangerous to think of moving him. His shirt, also, was now changed after six days. During that period his bowels had not been moved, and it seemed imperative that they should, so 2 drachms of castor oil were given, with instructions not to strain in any way, and this was quite satisfactory. Slight improvement generally was noted that day, and was steadily maintained. By the 18th he was much better, and could move about gently in bed without distress, and cyanosis

had almost disappeared. The cardiac murmur was now diminishing, being much softer in character. The bases of the lungs were now examined after a week's interval, and no râles were heard. Expectoration of blood had ceased. He took light nourishment well. The further progress was uneventful, and he made a good, though slow, recovery. The murmur referred to quite disappeared, though a soft systolic puff continued to be heard at the apex of the heart. Later on, when he had begun to walk about, he suffered from œdema of of both legs, apparently due to a failure in compensation. This proved very obstinate. Cardiac tonics helped but little, and rest did good only temporarily. The ultimate recovery from it seemed decidedly assisted by "Schott" exercises, and change of air no doubt also aided by the lapse of time, and gradual restoration of the vigour of the cardiac muscle.

In this case, the course of events seems to have been something as follows:—Some injury to the intima of a vein in the leg, when running after a car, followed by latent thrombosis; then the detachment of a small embolus on the morning of the 8th, waking the patient up and causing faintness, cardiac pain, and breathlessness; the passage of the embolus into the lungs, with subsidence of the disturbance it caused; then, later on in the day, a secondary detachment, producing grave symptoms, the embolus lodging in the right ventricle of the heart, near or at the pulmonary opening, causing a systolic bruit, growing in intensity or harshness as the embolus shifted its position or increased in area or size by secondary thrombosis, thus causing the severe cardiac symptoms; the gradual subsidence of the embolus by absorption or piecemeal detachments of it into the smaller vessels of the lung, followed by recovery. Or it may be that the first or second embolus, if there was a second at all, was followed by a secondary thrombosis in the left pulmonary area, spreading back towards the pulmonary orifice of the heart.

With regard to treatment, the first place must, no doubt, be given to absolute rest, and skilful nursing night and day, for without either he must have died. What influence did drugs have? I can only say that he expressed relief after taking the ammonia, which, presumably, was due to its stimulant properties. He felt relief also from his worst distress when he got whisky. In the minds of those who have seen such cases there is no hesitation, apparently, that free stimulation must be an essential part of the treatment. The late Sir B. Ward Richardson claimed for ammonia the power of preventing

fibrinous coagulation in the vascular system, and wrote a paper on the treatment of that condition, extolling ammonia, in the *Asclepiad* (1886), but I regret I have had no opportunity of referring to it. Dr. Barr, of Liverpool, speaks of it, in a very interesting paper on the treatment of pneumonia, in the *British Medical Journal* (16th June, 1900), and it was largely in consequence of my perusal of his paper that I gave ammonia, as soon as I had come to a conclusion as to the nature of the case I was dealing with.

At first sal volatile was employed, but soon full doses of ammonia were substituted, and these were readily taken in various vehicles, sufficiently diluted in water not to catch his breath. The drug was given as nearly as possible every hour for three days, and kept up in other combinations, at greater intervals, for some time afterwards. It is certainly the drug to employ in such cases, for it is a quick and sure stimulant, and carries the possible possession of the additional virtue Richardson claimed for it.

With regard to literature on the subject, much of it is to be found in works on obstetric medicine. Playfair's chapters on these cases in his well-known book are worthy of perusal. He refers to the rarity of recovery from such conditions, and quotes a number of cases, some of them (though, of course, in puerperal females) resembling very closely the one recorded here as regards the cardiac movement and other symptoms, especially the site of the murmur, its characters, and the fact of its ultimate disappearance. He quotes a case from Richardson's *Clinical Essays*, in which "a fibrinous band, having its hold in the ventricle, extended into the pulmonary artery."

He also quotes Walshe's *Diseases of the Heart* with regard to the development of a murmur in cardio-pulmonary thrombosis as follows:—"The only physical condition connected with the vessel itself would probably be systolic basic murmur, following the course of the pulmonary main trunk and of its immediate divisions to the left and right of the sternum. This sign I most certainly heard in an old gentleman, whose life was brought to a sudden close, in the course of an acute affection, by coagulation in the pulmonary artery, and to a moderate extent in the right ventricle." With regard to treatment, Playfair emphasises two things—stimulation by alcohol or ammonia, and absolute rest.

Writing on pulmonary embolism, Hilton Fagge says, "If the clot should be small, and plug only one pulmonary artery or a branch, then death may not occur so speedily, but be postponed for an hour or two. In other cases the detached

portions are still smaller, and, not being large enough to close the vessel entirely, they stick in some of the branches, and these form a focus for further coagulation. This proceeds until the whole lung is blocked, and a fatal termination may be delayed for a few days. Under these circumstances, the patient, though very rarely, may recover."

Fagge also details a most interesting case of slow coagulation in the lungs, with lingering, though fatal, symptoms, which much resembles the case I met with (see his *Principles and Practice of Medicine*, 1886, vol. ii, p. 86):—

"A medical man, 50 years of age, was seized on the 3rd of March with difficulty of breathing, and on the following day he was carefully examined by Dr. Wilks. His apnoea was of that kind so frequently seen in cardiac disease; the patient was panting and breathless; the respiration was very quick, and on the slightest exertion it almost ceased, as happened more than once on his attempting to move out of bed. On examination of the chest nothing abnormal could be discovered; the heart sounds were healthy, its action quiet, and the pulse was 80. The patient had no difficulty in taking a very full breath; indeed, he felt, he said, as if he must breathe too much. A suspicion of embolism caused an examination of the whole body, when it was found that he had had phlebitis of one leg, arising from an injury six months before. The patient also said that a month ago he was seized with difficulty of breathing, which passed off after a few hours. Dr. Wilks concluded from this that he had embolism of the pulmonary artery. On the following day he was no better, and on 6th March I saw him, but could discover no disease in the chest from the existence of any physical signs. On 7th March he was worse, and was beginning to spit up tenacious, rusty, and bloody mucus. On 8th March he was dying, gasping for breath, and with great lividity of the extremities. The heart was regular, and there was no bruit. The autopsy showed embolism of both branches of the pulmonary artery. In the left was a large clot, tolerably recent, and in the right an older one adherent to the walls of the vessel."

Fagge also mentions a case of recovery from pulmonary embolism as being a rare event. It followed the operation for varicocele. The patient nearly died at the onset, being pulseless and cold; he developed crepitations at the left base on the third day, expectorated bloody mucus on the fourth, and a slight murmur at the base of the heart developed, which was more audible on the fifth day, and was traced up the left side in the course of the pulmonary artery. On the seventh

day the bruit was less audible, and the crepitations in the lung were diminishing, and by the eleventh day these signs were gone, and he gradually convalesced.

Pye Smith, in an editorial note to Fagge's volume, says he met with two cases of recovery from pulmonary embolism.

Interesting articles on the subject are, of course, found in many books on general medicine and obstetric medicine—*e.g.*, Parim, Norris, Spiegelberg, on obstetrics—and the strikingly graphic description of the symptoms and diagnosis in Allbutt's *System*, by Professor Welch; but I may close with a further reference to the treatment by Dr. Sansom ("Diseases of the Mitral Valve," Allbutt's *System*, vol. v):—"The late. Sir Benjamin Ward Richardson advocated the frequent administration of liquid ammonia, well diluted, as a means not only of inducing fluidity of the blood, but also of dissolving a coagulum already formed. There may be differences of opinion whether such solution be thus possible; but there are many reasons in favour of the treatment. Besides increasing the alkalinity of the blood plasma, ammonia is a valuable stimulant of the nervous mechanism of the heart and of the respiratory centre.

. . . I have witnessed a case in which death seemed impending from plugging of the pulmonary artery, when the frequent administration of ammonia seemed to be the means of saving the patient's life."

THE COMMUNICABILITY OF SCARLET FEVER BY DISCHARGE FROM THE EAR.

By JAMES KERR LOVE, M.D.,
Aural Surgeon, Glasgow Royal Infirmary.

ABOUT the middle of September, 1900, John and Lizzie B. were removed from Cathcart to the Darnley Hospital, suffering from scarlet fever. Both returned on the same day, eight weeks afterwards, with desquamation completed, and both were well, except that John had a suppurating ear. Three or four days before their return, James, the only other child of the family, was sent to Irvine, to make quite sure that he would not take the disease. James remained in Irvine till 4th December, twelve weeks after the other two children took scarlet fever, and four weeks after their return from the hospital.

In the meantime, John's ear continued to discharge, and

Dr. Whish, of Shawlands, was called in because of pain and swelling of the mastoid region. He diagnosed an acute mastoiditis, and asked me to see the child, believing the case one for immediate operation. I operated at once, and the case did well; all discharge ceased in about two months, and has not since reappeared.

Before the operation, which was on 8th December, James and John had been playing together for four days; and on the fifth day after the operation, before John's wound had been dressed, James sickened with scarlet fever, and died within twenty-four hours.

There can hardly be any doubt that James caught the disease from John's running ear in the thirteenth week after the latter took the disease, and the lesson of the case is that no patient who has had scarlet fever should be dismissed from a fever hospital while discharge from the ear continues. If such suppuration be protracted, the middle ear and its *adnexæ* should be thoroughly opened before the case be dismissed.

DR. FINSEN'S LUPUS TREATMENT.

By FRED. HUGH CLARKE, M.B., C.M., DUMFRIES.

At the present time, when so much is being said and written about the Copenhagen methods of the treatment of lupus, the following letter from a patient undergoing the cure may be of interest. Professional descriptions and estimates of the value of the method have often been published, but I have never seen the "cure" described from the patient's point of view. The letter is given as written by a patient of mine who has suffered from lupus vulgaris of the cheek for eighteen years, and who at various times has been under the care of several well-known dermatologists. At the time of writing she had been under the light treatment for seven or eight weeks:—

"COPENHAGEN, 23rd July, 1901.

"DEAR SIR,—Your letter duly received, and I shall with pleasure tell you all I can about Finsen's, and the treatment here, in a rambling way.

"The first feeling a patient has on arriving at the Institute is one of shock. Instead of seeing a finely-built building, you are landed into two wooden sheds with glass sides, not any

better than a joiner's shop; but this feeling only lasts a moment, to give place to one of horror when one first sees the condition of the various patients undergoing treatment. Fortunately this also soon vanishes, and we are lost in wonder and amazement at what has been accomplished for suffering humanity in that unpretentious little building.

"Professor Finsen takes nothing to do with the actual working of the institution. Four doctors are in daily attendance, each being on duty so many hours. Dr. Forchhammer is chief, is considered to be very clever, and, from personal experience, I can say is very kind; indeed, they all are. The treatment is given by the matron, who has under her forty nurses. Each patient must go to the doctor's room at least once a week; some go daily—it depends upon the burning that is required. I am a weekly patient.

"At present there are one hundred and thirty patients under treatment daily. All who apply are admitted, and there is no selection of cases. The *séances* go on from 7:30 A.M. to 7:30 P.M., each lasting one hour and a quarter, and twenty patients are treated at a time. The patients come from every part of the world, and their ages range from 10 months to 60 years. Just now it is principally sun treatment that is given; but lamp treatment is best—it is so much stronger than the sun. I don't have sun; I once had it, and never wish to have it again. Of course, you must understand that to be made better you are in the first place made a great deal worse. At present I have an exceedingly sore face, badly blistered from burning, and quite as bad as any you ever gave me. Four nurses are kept dressing wounds all day at the tables, and are careful to the most minute detail.

"One wish in the hearts of most of us here is that those who write of the delightful painless cure had only three hours under a lamp; their description would be considerably modified. In some cases the pain is not so great as in others—an old lady on the next couch to me was actually asleep the other day when under treatment, while I was almost kicking with the pain of it. The pain varies greatly, and the 'almost unbearable' is not always experienced. I was fourteen times under the lamp, then fourteen days off till my cheek healed. Some patients never require to be off treatment at all.

"As to results, from what I have seen—and I have seen a lot in the weeks I have been here—I hold this is a cure for lupus vulgaris. I am not prepared to speak so confidently about lupus erythematosus, though in many cases the results have been excellent. The chances of its recurrence are great.

Some of the cases I have seen are improving very much, though slowly. It is not nearly so common as vulgaris, and the treatment does not blister to any extent.

"The one drawback to the method is its slowness; it certainly takes time, and time means money. We English patients are really the paying patients, those from Denmark paying almost nothing, while many are free; but there is no distinction made between the classes. There is nothing of the money-making element in the place, and what we don't get we don't pay for. There is no Sunday treatment, and we get twenty-six *séances* monthly. If any are missed, from the state of our wounds or other reasons, they are made up to us. The charge at the institute is 100 kroner monthly (*i.e.*, £5, 12s. 6d.), which includes dressings, professional attendance, &c.

"Living is not expensive in Denmark—rooms and board in very comfortable quarters can be had from 60 to 70 kroner a month. Ten guineas a month is quite sufficient to meet all necessary outlays, unless travelling expenses. The food is good and plentiful.

"I omitted to say that in August we go to a new institution, money having been given by the Government now that the cure has proved more than an experiment.

"I have written a true account of this place so far as I could; and if there is anything I have missed, or that you wish to know further about, I shall be only too glad to tell you. Whether I shall be cured remains to be seen. I have no fear of the result. Even though I am not, I should still say to anyone suffering from lupus, and wishing to be cured, this is the most likely place to come to.—Yours, &c.

"M. J. W."

Note.—The last report from Copenhagen (11th November) states that a very small patch of lupus still remains. The case has proved stubborn, owing, it is thought, to the infection being deeply seated.

The patient adds that the doctors there strongly disapprove of scraping beyond the apparent limits of the disease, of tuberculin inoculations, and, most of all, of transplantation, which is "almost death" to their method of cure.

Obituary.

REV. JAMES DALZELL, B.D., M.B., C.M., L.F.P.S.G.,
GORDON MEMORIAL MISSION, NATAL.

IT is with deep regret that we hear of the death of Dr. Dalzell, who, during all the turmoil of the last thirty years, has so worthily represented the Christian faith on the borders of Zululand. He graduated at Glasgow University in 1870, and obtained the licence of the Faculty of Physicians and Surgeons in the same year. The Gordon Memorial Mission of the United Free Church of Scotland is called after the family name of the Earl of Aberdeen, and it was on behalf of that family that Dr. Dalzell founded it. He was selected for the purpose by Dr. Duff, and went out in 1870. His wife and her sister supervise the women's side of the mission, which lost another of the sisters, Miss Lorimer, about a year ago.

Dr. Dalzell died a martyr to his profession. In operating on a Zulu woman he pricked his finger, but he would not attend to himself till his patient was safe. Blood-poisoning set in, and in spite of the efforts of his nephew, Dr. Hunter, and the district medical man, he died, after nine days, on 21st September, at the age of 60.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—List of Degrees in Medicine conferred on 7th November, 1901:—

DOCTORS OF MEDICINE (M.D.)

I.—WITH HONOURS.

David Louis Cairns, M.B., Ch.B., Scotland. *Thesis*—"Researches on the Agglutinating and Prophylactic Properties of Blood Serum in Cases of Plague, with Observations on the Hæmatology and Bacteriology of the Disease."

II.—WITH COMMENDATION.

John Aitken, M.B., Ch.B., Scotland. *Thesis*—"Blood Counts in the New Born."

Arthur James Ballantyne, M.B., Ch.B., Scotland. *Thesis*—"Affections of the Eye due to Injury by Blunt Objects."

- George Coats, M.B., Ch.B., Scotland. *Thesis*—"Unilateral Hæmorrhagic Retinitis and Hæmorrhagic Glaucoma."
 John Henderson, M.B., Ch.B., Scotland. *Thesis*—"Observations on the Maternal Blood at Term and during the Puerperium."
 James Donald Rae Monro, M.A., M.B., C.M., Scotland. *Thesis*—"A Study of Appendicitis in General Practice, with an Analysis of Thirty-six Cases."

III.—ORDINARY DEGREE.

- Agnes Forbes Blackadder, M.A., M.B., Ch.B., Scotland. *Thesis*—"Six Cases of Acute Dilatation of the Heart occurring in Children."
 William Brodie Brodie, M.B., C.M., Scotland. *Thesis*—"The Action of Oxalates upon and the Relation of Calcium Salts to Muscle."
 William Cullen, M.B., C.M., Scotland. *Thesis*—"Insomnia: Clinical Observations and some Therapeutic Suggestions."
 Robinson Simpson Dixon, M.B., C.M., England. *Thesis*—"Observations on a Case of Actinomycosis."
 Charles Herbert Hall, M.B., C.M., England. *Thesis*—"The Medical and Allied References in the Writings of Chaucer."
 John Hepburn Lyell, M.B., C.M., Scotland. *Thesis*—"A Study of some Clinical and Pathological Aspects of Scarlet Fever."
 Eva McCall, M.B., Ch.B., Ireland. *Thesis*—"Some Account of the Recent Epidemic of Beer Poisoning as observed among Patients in the Salford Union Infirmary."
 Roderick Alexander Macleod, M.B., C.M., Scotland. *Thesis*—"Acute Encephalitis."
 Edward James Morris, M.B., C.M., Wales. *Thesis*—"Carbonic Oxide Poisoning in Mines, with special reference to the Tylorstown Explosion."
 William Roxburgh, M.B., C.M., Scotland. *Thesis*—"Organotherapy."
 Alexander Bankier Sloan, M.B., Ch.B., Scotland. *Thesis*—"Observations on One Hundred Consecutive Cases of Enteric Fever."
 Hugh George Stewart, M.B., C.M., Scotland. *Thesis*—"The Finsen Treatment of Lupus Vulgaris: the Benefits to be derived from it; Comparison between it and other ways of treating the Disease."
 Ernest Watt, M.B., Ch.B., Scotland. *Thesis*—"The Prognosis and Treatment in Scarlatina."

BACHELOR OF MEDICINE (M.B.) AND MASTER IN SURGERY (C.M.)

George Wardlaw Milne, Scotland.

BACHELORS OF MEDICINE (M.B.) AND BACHELORS OF SURGERY (Ch.B.)

Robert Wellwood Auld, Scotland.	Wm. Ferguson M'Glashan, Scotland.
John James Young Campbell, Isle of Man.	Karen Margrethe Myhre, Norway.
Edward Seymour Chapman, England.	Robert Orr, Scotland.
George Herbert Clark, Scotland.	Mary Emma Potter, Ireland.
Duncan Johnston Fletcher, "	Andrew Reid, Scotland.
Thomas Forsyth, "	Elizabeth Ness Macbean Ross, England.
William Gemmill, England.	John Stewart, M.A., Scotland.
James Dickson Gourlay, Scotland.	Robert Rennie Swan, "
Archibald Gow, "	Robt. Geo. White, M.A., B.Sc., "
Janet Bisland Higgins, "	James Wilson, "
Alexander Linn, "	William Robertson Wylie, "
Walter James M'Feat, "	Henrietta Fraser Young, "

GLASGOW ROYAL ASYLUM FOR LUNATICS, GARTNAVEL.—
Mr. Landel Rose Oswald, M.B., C.M., Physician-Superintendent
at Gartloch Asylum, has been appointed Physician-Superin-
tendent at Gartnavel, in succession to Dr. Yellowlees,
resigned.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING I.—4TH OCTOBER, 1901.

The President, DR. W. G. DUN, in the Chair.

ON BLOOD-LETTING IN THE TREATMENT OF DISEASE.

BY DR. W. G. DUN.

Dr. Dun's paper will be found as an original article in our
issue for November, 1901, at p. 321.

MEETING II.—18TH OCTOBER, 1901.

The President, DR. W. G. DUN, in the Chair.

I.—HYDROCELE OF THE TUNICA VAGINALIS: TWO CASES TREATED
BY A NEW AND SIMPLE PROCEDURE: WINKELMANN'S
OPERATION.

BY DR. H. RUTHERFURD.

Winkelmann's operation, described by him in the *Central-
blatt für Chirurgie*, 1898, No. 44, consists in—

1. Incision of the sac.
2. Turning of it inside out so as to prevent its closing over
the testicle.
3. Closure of the wound in the other tunics and skin of the
scrotum.
4. This being done under a local anæsthetic.

It may be claimed for the operation that it is effective, *cito tute ac jucunde*, and this is borne out by the cases which are presented to-night.

Treatment by injection, besides being somewhat uncertain in its results, requires three to four weeks to effect reduction of the inflammatory tumour to a comfortable size. Incision and drainage (von Volkmann) or packing is tedious, and involves risks of suppuration that are not to be made light of. Excision of the parietal layer of the sac, with or without immediate closure (von Bergmann), involves an amount of oozing which makes the wound a serious, and, possibly, a troublesome one. In neither of these operations did I ever hear of a patient being up and about within ten days. In one of these cases the patient was allowed to get up on the seventh, and in the other on the fourth day.

CASE I.—Arthur G., aged 17. Hydrocele of traumatic origin, which had been tapped seven times at intervals of seven or eight weeks, after which he was sent to the Royal Infirmary by the doctor who had attended him. There was a tumour, about 5 inches long, on the right side. Eucaïne in salt solution (1 to 1,000) was injected; but as after about ten minutes it seemed to have produced little effect, a solution of 1 in 100 was then used, and the operation done with little discomfort except in handling the testicle. After closing the wound, the scrotum was carefully braced up with a pad and double T bandage. Some little œdema occurred here; but on the seventh day (8th September) the stitches were all removed, and on the following day he was allowed to get up, with a patch of collodion dressing and the support of a T bandage. The right testicle still presents a bulkier mass than the left; but it is of inconsiderable size, and has given him no trouble since he got up.

There was in this case at first a feeling as of some fluid between the testicle and its covering; but this, I think, has disappeared.

CASE II.—Arthur K., aged 51. Hydrocele of three years' standing, during which time it had been tapped ten or twelve times. Operation on 8th October under eucaïne in salt solution (1 to 100). Here ten stitches were taken out on the fourth day, and the patient got up on the fifth, protected merely by a patch of collodion dressing. He comes before you now, ten days after the operation, with a testicle little

different from the other one. It seems slightly adherent to the region of the wound, and a thickening can be felt corresponding to the sutures which were put in the sac to keep it in its new position.

22nd October.—The testicle is now freely movable in the scrotum.

The sac in both these cases was quite thin, and it must, I think, be recognised that there must be a limit to the application of the operation where the sac is greatly thickened. Such cases will call for more or less complete excision of the sac, or even for removal of the testicle, as the shorter and surer method.

Dr. Gibb said that this method was very speedy, and worthy of a trial. Whether it would succeed in old cases where the tunica vaginalis is greatly thickened is a matter of doubt.

Dr. Rutherford replied.

II.—OPERATION FOR PARALYSIS OF THE SUPERIOR OBLIQUE.

BY DR. FREELAND FERGUS.

Cases of paralysis of an isolated muscle of the eyeball following trauma must be very rare, and it is because of this rarity that I have ventured to bring the following before the Society.

The patient was a man in the prime of life, who was thrown from his bicycle, and on recovering found that he had, for certain directions of fixation, diplopia. He was sent by the gentleman whom he consulted to the Glasgow Eye Infirmary, where he was seen by me. After a prolonged examination, I came to the conclusion that the muscle affected was the superior oblique of the right eye. The following facts seemed to point in the strongest way to this diagnosis:—

The diplopia was in the lower half of the field of fixation. When he came into the consulting room, I noticed that his head was bent forwards, the chin being flexed on the neck. Carrying his head in this awkward attitude, he had no diplopia on looking forwards—*i.e.*, while using the upper part of the field of binocular fixation. When, however, the head was raised to the usual position, it was immediately felt.

This fact of itself showed that the action either of the inferior rectus or of the superior oblique was defective. Other features in the case determined the diagnosis. Both

muscles move the eye downwards, but their subsidiary actions are entirely different.

The inferior rectus, from its oblique direction, not only rotates the ball downwards, but also causes a convergence, and moves the upper part of the cornea slightly outwards. Hence paralysis of the inferior rectus causes an appreciable divergence, which gives a "crossed" element to the diplopia. Thus, in paralysis of the inferior rectus, one image is higher than the other, and the images are slightly crossed.

The superior oblique, on the other hand, causes a certain divergence, and rotates the upper part of the cornea slightly inwards. Hence paralysis of the superior oblique causes an appreciable convergence, and, consequently, a homonymous diplopia.

In the case under review the images were slightly but distinctly homonymous. Moreover, the upper part of the cornea on the affected side was seen to rotate slightly outwards when the patient looked downwards. If further proof were wanting, it was to be found in the tilting of the images.

In paralysis both of the superior oblique and of the inferior rectus the false image is not only vertical, but is slightly inclined. In the case of paralysis of the superior oblique, its upper extremity is inclined towards the sound side, and in that of the inferior oblique towards the paralysed side. An examination of the images from this point of view confirmed the diagnosis already arrived at.

The question came then to be as to what was possible for this man's relief. No attempt could be made to advance the superior oblique muscle itself. Anatomically, it is all but impossible to do so. Moreover, it is seldom advisable to advance a muscle that seems to be completely paralysed. If this be done, the eye is simply ligatured in a new position. Landolt advises that in such a case the inferior rectus of the affected eye should be advanced, and I determined to try the effect of this simple operation. Accordingly, a considerable advancement of the right inferior rectus was made. The wound healed at once, and without any trouble. The patient was seen from time to time for about a month after he left the Glasgow Eye Infirmary. At the end of that time he sailed for South America. At his last visit to the hospital I examined him with some care. It was then found that one definitely good result had been obtained—viz., the patient held his head, in walking, in the usual position. Further, there was excellent binocular fixation; it seemed to be defec-

tive only when we came to an angle of some twenty degrees below the horizontal plane of the eyes.

Note on the above.—In the discussion which followed on the narration of this case, my friend, Dr. Wilson, pointed out a thing of which I was well aware—viz., that tenotomy of the inferior rectus of the sound eye had been performed for this very defect, and attributed my preferring advancement to a bias which I have for this operation. It is quite true that I am in the main averse to tenotomies. As a rule, although perhaps not invariably, little is to be gained by the destruction of a healthy function in one eye to relieve an abnormal one in the other. But on the face of it, if ever there was a case in which a tenotomy was to be avoided, it was the case under discussion. The man had good binocular fixation with his head bent forward. He could at any moment he chose have excellent monocular fixation with his head in a natural position by the simple process of shutting the affected eye. Had the healthy eye also been made permanently to deviate upwards, would he have had the same easy and natural fixation with the non-paralysed eye? I think it extremely doubtful.

Again, by the operation which was performed, the patient had good binocular fixation, with his head erect, for the horizontal plane and for a considerable angle below it. It is extremely doubtful if such a result would have been obtained by a tenotomy. I cannot but regard tenotomies as being, for the most part, haphazard experiments which sometimes give a fairly good result.

Dr. Rowan asked if *Dr. Fergus* had any guide as to the amount of muscle he removed.

Dr. Leslie Buchanan enquired if *Dr. Fergus* had any idea where the lesion was.

Dr. Fergus replied that he had no guide as to how much muscle should be removed, but he took out a large piece. He had no idea where the lesion was.

III.—CASE OF PERIPHERAL THROMBOSIS AND CARDIO-PULMONARY EMBOLISM TREATED BY LARGE DOSES OF AMMONIA.

BY DR. R. O. ADAMSON.

Dr. Adamson's paper appears as an original article at p. 406.

**IV.—FRESH SPECIMENS OF CANCER OF THE SIGMOID FLEXURE
AND LIVER.****By DR. HUGH M'LAREN.**

I have ventured to bring these specimens before the Society, as they illustrate in a marked degree that secondary cancerous growths are frequently more extensive than the primary tumour. What I take to be the primary tumour is situated at the lower end of the sigmoid flexure. It almost completely encircles the lumen of the tube; it has involved all the coats of the intestine, and it projects considerably into the calibre of the bowel. It must have produced some obstruction; but it could only have been slight, as above the obstruction there is no hypertrophy of the muscular coat, and little or no dilatation of the bowel. The mesenteric glands in the immediate neighbourhood of the sigmoid tumour are slightly enlarged. The liver is very large, and weighs 170 oz. The hepatic tissue is almost entirely replaced by round masses of a creamy colour. Many of the masses are very large, and some are small. Sections from the primary and secondary tumours were examined under the microscope. They presented the usual structure of a cylinder-celled epithelioma.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.**SESSION 1901-1902.****MEETING I.—14TH OCTOBER, 1901.***The Vice-President, MR. A. E. MAYLARD, in the Chair.***I.—A. TWO CASES OF TUBERCULAR TUMOUR OF THE BRAIN;
B. A GLIO-SARCOMA OF THE PONTINE REGION WITH PECULIAR
RELATIONSHIPS.****By DR. R. S. THOMSON AND DR. A. R. FERGUSON.**

Dr. Thomson and Dr. Ferguson showed three examples of brain tumours. Of these, two were examples of tubercular tumour of the brain, and the third was a glio-sarcoma, probably associated with the pituitary body. The clinical and pathological records of the cases are as follows:—

A. CASE I.—M. M., æt. 9, was admitted to Ward II of the Western Infirmary on 3rd August, 1901, complaining of blindness, headache, and vomiting. The headaches had lasted for about seven or eight months, occurring, on an average, about once a week, and had usually been accompanied by vomiting. Defective eyesight was first noticed about a month before admission, and gradually became more marked. The pain in the head affected both occipital and frontal regions. The mother had occasionally noticed staggering during walking.

Patient's previous health had always been good. She was one of a family of fourteen, of whom six died in infancy.

Present condition.—The parents were unable to give any definite history of tuberculosis in the family. General nervous symptoms are practically absent, the reflexes, movements, and sensation being normal. The child is bright and intelligent, and answers questions readily; is able to repeat numbers and spell short words. Her memory seems to be good. There is sometimes a little hesitation in answering questions, but this is possibly due to deafness, which is associated with a chronic otorrhœa, the tick of a watch being heard only at a distance of about 3 inches.

The following note is supplied by Dr. Leslie Buchanan after ophthalmoscopic examination:—

"There is swelling of the optic nerve, with complete obscuration of the disc. No hæmorrhages are seen. Large numbers of small, very bright, white spots radiating from the macula, in particular towards the nerve, are observed. Both eyes are in a similar condition."

There are no symptoms of any kind associated with the vascular, respiratory, digestive, or urinary systems.

On the 9th, patient had a "fit," in which she became partly unconscious; the spasm, which affected all the limbs, was more of a tonic than a clonic character, although, according to the statement of the nurse, there were occasionally slight muscular tremors. This condition, which was preceded by headache and vomiting, lasted about five minutes, and was followed by a partial unconsciousness or stupor, which gradually passed away.

On the 17th, at 6 A.M., after an attack of pain in the head and vomiting, the child had a second fit of a character almost identical with that of the first. All the limbs were affected, and the spasm was mainly tonic. The pupils were semi-dilated, and did not respond to light. The child continued unconscious for about four hours, when she died. The spasm of the muscles continued till the end.

The most striking feature in addition to the unconsciousness and tonic spasm was the condition of the respiration. This did not seem much embarrassed, but the respiratory movements became gradually slower, till, towards the close, respiration occurred only four or five times per minute, with intervals of complete apnoea.

The *post-mortem* record is as follows:—

"Permission only is granted to examine the head. Viewed externally, the dura mater presents nothing of note. The superior longitudinal sinus is normal in appearance. The membranes are adherent over the anterior inferior aspect of the cerebellum on the left side, a little below the anterior extremity of the superior petrosal ridge. The membranes are also adherent over the posterior border of the cerebellum on the same side. These adhesions indicate the position of two tubercular tumours of the cerebellum which reach the surface where adhesion of the membranes has occurred. These tumours (each a little smaller than a hazel nut) are firm, caseous throughout, and almost drop out of the soft cellular tissue during removal of the brain. Besides these, there are one or two smaller nodules in the cerebellum, and over a dozen of small size scattered over the surface and throughout the substance of the cerebrum.

"Evidences of a general tubercular meningitis are absent.

"The surface of the brain generally is dry and glazed, and the convolutions are flattened.

"The lateral ventricles are considerably distended with fluid, and the brain tissue internally is very soft.

"One of the cerebellar tumours examined microscopically exhibits, in very typical fashion, the features of the 'tubercular tumour' as seen in the brain."

CASE II.—D. L., æt. 7, was admitted to Ward II of the Western Infirmary on 3rd August, 1901, complaining of headache, vomiting, and loss of vision. Two years ago the patient fell down some steps, and suffered from an incised wound over the left temple. Fifteen months before admission he had an attack of scarlatina, followed by chicken-pox, and, according to his mother's statement, has never been quite well since. Five months later he developed an abscess over the right clavicle, which was opened in the dispensary of the Royal Hospital for Sick Children. From this date till admission the child seemed to be losing flesh, and was not as

robust as formerly, though there was no evidence of any specific ailment.

Five week before admission the child complained of pain over the left side of the head, which was usually accompanied by vomiting. From this time onwards there was a gradually increasing failure of vision. After the headache had lasted about a fortnight the child was observed to squint, but beyond this fact the mother was unable to give any definite information regarding the character of the squint; she was, however, of the opinion that the child sometimes saw objects double.

The family history, so far as ascertainable, was good, and without any special indication of tubercular tendency.

The general health of the child, apart from the symptoms complained of, seemed moderately good, there being nothing noteworthy in the case except the fact that the lymphatic glands in the neck, axillæ, and groins were slightly enlarged.

Nervous system.—There is nothing noteworthy with regard to the patient's condition as regards either sensation or movement of the limbs. There is, however, slight paresis of the muscles on the right side of face, involving specially those of the lower portion. An examination of the eyes demonstrates paralysis of both external recti muscles, which results in a convergent squint, with inability to move the eyeballs outwards to any extent.

The pupils are semi-dilated, but respond badly to light. The child's visual acuteness is practically zero.

Ophthalmoscopic examination by Dr. Leslie Buchanan showed very marked optic neuritis in both eyes, but most marked in the right. The margins of the disc were greatly obscured. In the right eye there were numerous hæmorrhages, and a similar condition was present in the left eye, where, in addition, there were present numerous small white spots, scattered mainly over the upper, outer, and lower parts of the retina. Beyond these symptoms and pain on the left side of the head there is nothing to indicate the situation of the tumour. The child is exceptionally intelligent, and gives a very accurate description of his symptoms.

There is nothing noteworthy to be discovered in the respiratory, circulatory, alimentary, or urinary systems.

7th August, 1901.—To-day, marked dorsiflexion of the great toe of the right foot was observed, with some loss of power in the peronei muscles of the right leg.

27th August, 1901.—A day or two ago it was noticed that the patient exhibited some loss of power in the right arm and

leg. These were slightly rigid, so that when the child lay in bed there was some inclination towards inversion of the foot and flexion of the toes, while the leg occupied a semi-flexed position.

A similar condition was present in the right arm, the thumb being flexed upon the palm with the fingers over it, while the hand was slightly flexed upon the fore-arm, and the fore-arm on the upper-arm. The paresis of the right side of the face, present on admission, was accentuated.

It was considered that the symptoms indicated the presence of a tumour involving the cortical motor area on the left side, with effusion into the ventricles, and, consequently, it was considered expedient to place the case in the hands of the surgeon.

The situation and size of the tumour, however, as revealed by operation, and more fully by the *post-mortem* examination, was not compatible with its removal, the child dying apparently from exhaustion.

The following is the pathological record in connection with the case :—

The body is in a fair state of nutrition. If anything, the upper limbs are more atrophied than the lower, but the difference is not a marked one. No material difference in the state of nutrition of the arms is noted. On the inner aspect of the right thigh, in its upper third, is a superficial scar, of purple colour, covered by a thin crust. There is a rectangular wound on the left side of the vertex of the head, the limbs of which measure in antero-posterior direction $3\frac{1}{2}$ inches, and in the transverse direction $2\frac{1}{2}$ inches. Softened brain tissue protrudes through the severed tissues of the scalp, considerably overhanging the edges of the incision through the dura mater.

The superior longitudinal sinus is filled with dark *post-mortem* clot, but neither the sinus nor its tributary veins is the seat of thrombus. There is considerable venous congestion of the brain substance, especially in its posterior part, and there is considerable œdema of the soft membranes over the convexity.

The dura mater surrounding the herniated portion of the brain is thickened, especially on the mesial aspect, and is pretty firmly adherent all round this area. The summits of the convolutions generally are flattened as if from internal pressure, but the surface of the brain is moist. There is some matting of the pia arachnoid at the base, just posterior to the optic

chiasma, and there is a good deal of clear fluid in the subdural space in this region. The appearances of tubercular meningitis, however, are absent. All the intracranial sinuses are found to be free of thrombus.

The dura is removed from the base of the skull with unusual ease, and the inner surfaces of the bones at the base are then observed to be slightly rough, as if from superficial erosion. This is specially the case in the left temporal fossa.

Both lateral ventricles are very considerably dilated, their cornua containing clear fluid. A tumour is exposed on the left side by the section, carried downwards and outwards, which opens into the lateral ventricle. This is situated on the outer aspect of the ventricle, in the situation of the lenticular nucleus and adjacent portion (caudate nucleus) of the corpus striatum. Its diameter, measured in the transverse axis of the brain, is 2.5 cm., and in general form it is spherical. The outline of the convolutions of the island of Reil is fairly well preserved, the main projection of the mass being inwards, indeed, at the point of its maximum inward projection the walls of the lateral ventricle are brought into apposition. The internal capsule and optic thalamus on the left side are greatly compressed by the tumour, particularly the former structure.

The brain tissue in the neighbourhood of the tumour is much softened.

No other tumours are discovered in any part of the brain substance. Both the naked eye and microscopical characters of the mass are those of the tubercular tumour met with in the brain.

Chest.—The pericardial sac is obliterated by adhesion of its layers, which are thickened. Small caseous foci are present between the adherent layers of the obliterated sac. The left cardiac ventricle is slightly hypertrophied, but otherwise the condition of the heart does not call for note.

Pleural adhesions exist on both sides, more particularly on the right, where the pleural sac is almost entirely obliterated. One or two small caseous masses are discovered on this side, near the base, between the adherent pleural layers. Both lungs, which are free from appearances of tuberculosis, are oedematous, and show irregular areas of collapse.

Nothing noteworthy is found on examination of the abdominal viscera.

B. CASE III.—P. B., æt. 47, was admitted to Ward VII of

the Western Infirmary on 29th July, 1901, complaining of headaches and loss of vision.

About ten months before admission to hospital patient began to suffer from headache, the pain being most severe in the lower occipital region, and extending upwards towards the top of the head. His eyesight began to fail about this time, and has become progressively more defective. During the first month of his illness patient was very thirsty, and passed an unusually large quantity of urine, but this condition gradually passed off, and for the greater part of his illness he was not affected in this way. For a fortnight during the second month of his illness vomiting was moderately severe, but since then there has been no tendency in this direction. Beyond these points there is nothing noteworthy in the history of the illness.

There is nothing in the previous history or in the family history of the patient meriting attention. There is no history either of syphilis or of malignant disease.

Present condition.—The patient is exceedingly pale, his general appearance suggesting advanced Bright's disease. The skin is dry and slightly scaly. There is no pain complained of except in the back of the head, but the pain here is not so severe as to prevent his sleeping soundly at night. He also dozes a good deal during the day. He complains constantly of cold, and when out of bed cowers over the fire. When questioned, he answers very slowly, but the answer is always intelligent. His hearing is defective, as he hears a watch at a distance of an inch only, but this is largely due, no doubt, to the presence of a marked naso-pharyngeal catarrh associated with the presence of post-nasal adenoid growths, some of which were removed early in the present year. Patient's sense of taste is normal, but his sense of smell is absent, this being probably associated with changes in the naso-pharynx and nostrils. There is no evidence of loss of cutaneous sensibility in any part of the body, and though the patient is feeble and his muscles considerably wasted, there is no evidence of paralysis or paresis except in the case of the eye. There is no ataxia. The reflexes are normal. There is a slight internal strabismus due to weakness of the right external rectus, but patient states that he has never suffered from double vision. The pupils are moderately dilated, and respond both to light and accommodation.

The result of examination of the eyes by Dr. Leslie Buchanan is as follows:—

"Visual acuteness of right eye, $\frac{20}{80}$; of left eye, $\frac{20}{200}$.

Ophthalmoscopic examination :—Right nerve pale ; congenital cup well marked. Lamina cribrosa not well seen. Edge of disc well seen. Left nerve, more pale ; vessels not so good in size as in right eye ; central cup deep. Patient has hypermetropic astigmatism of about 2 D in each eye."

There is nothing noteworthy in either the circulatory, respiratory, digestive, or genito-urinary system. There has been no glycosuria.

7th September, 1901.—Patient died to-day. Since admission there has been no change in his symptoms, except that the drowsiness present on admission gradually deepened until he became comatose. Death was somewhat sudden, but not associated with any unusual respiratory difficulty.

Post-mortem report :—

The body is rather emaciated. The general surface is very pallid and anæmic. No œdema (the examination is restricted to the head).

Head.—The calvarium is of normal appearance. The dura mater is not morbidly altered. The surface of the brain is soft and moderately œdematous. Viewed *in situ*, the sella turcica appears more bulky than normal ; the infundibulum of the pituitary body is thickened, and this is due to some soft, pinkish-grey tumour tissue which envelops it. The pituitary body itself is the seat of similar tumour tissue. After removal, the pituitary body is found to be moderately enlarged and extremely soft. The clinoid processes are intact, and not much farther apart than normal. In proceeding with the removal of the brain, another mass of tumour tissue comes into view. This is slightly adherent to the flattened portion of skull base between the posterior clinoid processes and the anterior part of the foramen magnum, *i.e.*, it lies, in a discoid fashion, on the inferior aspect of the pons varolii between this structure and the base of the skull. It can be easily separated from the dura mater, which shows no material change. The tumour does not spring from the pons, though concealing all the median portion of this structure. The tumour, along with the trunk of the basilar artery, can be dissected completely off the pons. Nor can absolute continuity between this tumour and the softer tumour tissue surrounding the pituitary body and its pedicle be definitely demonstrated, some strands of connective tissue with fine vessels alone separating the two.

No other tumour in the brain is discovered.

The lateral ventricles have both been very considerably

dilated, and their internal surfaces show signs of superficial softening.

Microscopically examined, the larger tumour consists of masses of cells, arranged in clusters, which are separated by a very vascular spindle-celled tissue. In the more cellular parts various types of cells (oval, pyramidal, and round), with prominent, deeply staining nuclei, are met with. In these cellular collections, which are apparently related closely to the vessels, numerous leucocytes, chiefly of the polymorpho-nuclear variety, are observed. The tumour conforms generally to the characters of the glio-sarcoma.

Mr. Maylard remarked that the condition revealed by the *post-mortem* examinations, and the unsatisfactory result of the operation in the second case, confirmed *Hale White's* opinion, founded on the analysis of a large number of cases of cerebral tumour observed in *Guy's Hospital*, that comparatively few of these cases came within the range of surgical interference.

Dr. Finlayson added that, taking the first case along with the second, even apart from the inaccessibility of the tumour revealed at the operation, surgical interference was contra-indicated. For, although there were localising symptoms for one growth, these did not guarantee the absence of others, and, even if the cause of them were removed, probably other foci of disease remained.

Dr. Rutherford objected that the previous speakers took far too pessimistic views about the prospects of surgical treatment in such cases. The benefits to be obtained immediately from relief of pressure and the establishment of proper drainage fully justified operation in properly selected cases, and where the surgeon was allowed to choose a period of quiescence, and to operate before the patient was too exhausted.

Dr. Alex. Robertson agreed with *Dr. Rutherford*. He thought that all cases of cerebral tumour with localising symptoms should be submitted to operation. In his experience "tubercular tumours" were usually single. In regard to the third case, he was particularly interested in the occurrence of polyuria, which suggested to him some pressure on the medulla oblongata, and he compared it to the occurrence of diabetes following puncture of a certain part of the floor of the fourth ventricle in animals.

Dr. Joshua Ferguson referred to a case which he recently examined, in which there was a tumour very similar to that

in the third case, near the pituitary body, but without demonstrable connection with it.

II.—CASE OF SYPHILITIC MENINGITIS WITH GUMMATOUS INFILTRATION.

BY DR. JAMES CARSLAW.

There was shown from this case a gunma of the meninges situated in the anterior part of the right frontal region, with softening of the underlying brain substance. Its histological characters were illustrated under the microscope.

The patient was a man of 50, a coachpainter, and he was admitted to Ward XII of the Western Infirmary, in an unconscious condition, on the forenoon of Saturday, 24th August, 1901. He belonged to Manchester, and had travelled to Glasgow by an excursion train during the previous night, intending to visit the Glasgow Exhibition. After a hearty breakfast, he was on his way to the Exhibition, when he fell down in convulsions. Assistance was obtained, and he was brought to the Infirmary, taking a second convulsion in the ambulance. Three hours after admission he vomited freely, after which he began to recover consciousness, and soon he was able to answer questions. He had no paralysis, and nothing abnormal was discovered in his heart, his lungs, or in any other organs, although it was noted that there was a trace of albumen in the urine. This latter fact was looked upon as possibly depending simply on the occurrence of the fits. During the next two days (Sunday and Monday) he was comparatively well. He did not suffer from headache, he had no further vomiting, and his pupils were normal, while he made no complaint of his eyesight. He was put on bromides, with a view to his early return home, and during the Monday evening he was up in the ward, and appeared well. However, about 4 A.M. the next morning (27th August) he was suddenly seized with convulsions, which were repeated frequently—in fact, over twenty times—so that he was practically in the *status epilepticus* till 10 A.M., when he died. These convulsions were noted to begin with dilatation of the pupils and conjugate deviation of the head and eyes to the left. Then the left arm was flexed at the elbow, the thumb turned in, and the wrist and the fingers flexed, and quickly the whole body passed into the tonic spasm, after which, in a few seconds, general clonic spasms followed, which passed off last from the right hand and arm. The

respiration was much interfered with during the convulsions, and in the intervals between them the breathing was laboured and the patient quite unconscious. He died in a livid condition. At the *post-mortem* a gumma was found in the anterior and superior part of the right frontal region, and there was also a chronic syphilitic affection of the liver and kidneys.

No satisfactory history of the patient's previous health had been obtained from himself. When the first convulsions passed off he was quite confused as to what had happened, and, indeed, did not remember having come to Glasgow at all. However, on the second and third days of his residence in hospital, he seemed quite clear mentally, and yet it would seem as if his memory had been at fault, as any facts he gave as to his previous health did not agree with what was afterwards elicited from his friends. After his death it was learned that he had had fits of some kind nineteen or twenty years before. Then, in the autumn of 1898 he was suddenly the subject of severe convulsions, lasting two and a half hours continuously on the first occasion; and at this time he was unable for work for four months. He was then under Dr. Steward, of Newton Heath, Manchester, from whom I have heard that he regarded the case as one of syphilis, a diagnosis that was inferred, although the patient did not give any distinct history of syphilis. Dr. Steward writes that "his attacks appeared to be very much of an epilepsy. I was under the impression that there must be some localised infiltration, but where I could not make out."

In the autumn of 1899 he again had a slight attack, and was off work for two weeks, while about a year later he had two or three convulsions, and was unfit for work for three weeks. During these later attacks he seems to have had no medical advice. The present attack is thus the fourth of recent years. As to the patient's health in the interval I have made special enquiry, and find that he seldom complained of headache, his eyesight had begun to fail, though this might be explained by his age, and he never suffered from sickness or vomiting.

Amongst the points of interest raised in connection with this case are the severity of the attacks of convulsions, and the long intervals of apparently good health between, intervals in which the ordinary symptoms of intracranial pressure seem to have been practically absent, in spite of the presence of a distinct gummatous tumour. There is also the question of localisation, which would have been raised clinically if a

tumour had been definitely suspected; but it would seem that little could have been done in this direction, the clinical symptoms giving but little guide, and the actual tumour being afterwards found beyond the limits of the motor area.

Dr. Alex. Robertson asked what was the exact site of the gumma, and was informed that the actual gummatous tumour lay over the lower part of the second frontal convolution, but the infiltration and thickening of the membranes extended a considerable distance around it. The gumma measured an inch and a half in diameter.

III.—CASE OF PORENCEPHALY.

By *Dr. L. R. Oswald.*

The patient from whom the specimen was obtained had been for about fifteen years in asylums, and died in Gartloch Asylum, at the age of 37, from pneumonia.

Mentally, he was epileptic, with delusions of persecution. He imagined other patients and the attendants were conspiring against him, and he believed that they tortured him at night. Fits were not numerous, and were easily controlled by the bromides. His intellectual condition was that of a high grade imbecile.

He exhibited a partial hemiplegia affecting the right arm and leg. These were smaller than the left. There was slight movement of the right fore-arm and fingers, and he could bring the arm out from the side. The leg was less atrophied than the arm, and he could walk, but with a dragging movement. There were no athetoid movements of the fingers, and the condition of the reflexes was not noted.

At the *post-mortem* examination, the skull-cap was found to be thin and asymmetrical. On removing the dura, a marked difference was seen between the two hemispheres, the left being the smaller of the two, and there being on that side a large cyst containing clear fluid. The convolutions over the area of the cyst were seen to be entirely absent, the outer wall being evidently composed of brain membrane. After having been in alcohol for some time, the following is a general description of the condition present, kindly supplied to me by *Dr. M. B. Hannay*, pathologist at the asylum:—

"The diameters antero-posteriorly, vertically, and laterally of the left hemisphere are all considerably less than those of the

right side, and there is a difference between them in weight of 200 grammes. The right is of average size and weight. Its convolutions are simple, and there is some wasting in the frontal and central regions. The corpus callosum is much diminished in thickness throughout its entire length, but especially in its posterior third. The left hemisphere, in addition to its smallness in size, presents the following peculiarities:—The first temporal convolution is very deficient in size and is exceedingly simple, and there is great deficiency and irregularity of the lower end of the central convolution. A cavity is thus formed which extends from the outer aspect of the hemisphere across the frontal lobe. The floor is formed anteriorly by the first and second frontal gyri, and posteriorly by what appears to be part of the corpus striatum. Its roof is formed by the same two convolutions, and its inner wall by the septum pellucidum. The cavity is fusiform in shape, and is continuous behind with the lateral ventricle, which is dilated. The first and second frontal convolutions and their sulci have a radial arrangement round the orifice of the cavity, more marked anteriorly, and absent from the central lobe. The central convolutions in their upper third are very simple and distinct, but below this they join, become complex and very irregular. The convolutions of the superior parietal lobule are very small. Two of those of the inferior parietal lobule are of good size, but the irregularity of the lower part of the central convolutions make their identification difficult. The Sylvian fissure is present in its normal situation, its horizontal and ascending limbs being of course absent. The fissure of Rolando is interrupted about the junction of the upper and middle thirds of the central convolutions by a gyrus connecting the two. On the mesial aspects the convolutions are all small, except at the anterior part of the frontal lobe, where they are of fair size. The lobes of the cerebellum appear to be of equal size, but the crus cerebri, pons, and medulla are all smaller on the left than on the right side. A section of the spinal cord in the dorsal region examined with the naked eye shows a comparative diminution in size of the lateral and posterior columns on one side, and of the anterior column on the other."

This is, I believe, a case of true porencephaly, and for these reasons—(1) The radial arrangement of the sulci and gyri round the orifice of the cavity; (2) because vascular occlusion would not explain the condition present (caudate nucleus and internal capsule are absent, but lenticular nucleus is present,

and these are supplied by the same set of vessels, and the third frontal convolution and island of Reil, both absent, are supplied by another set of vessels); (3) the completeness of the convolution around the opening is against hæmorrhage; (4) the cyst communicates with the lateral ventricle.

It is reasonable to suppose that the porencephalic condition is due to congenital defect, and that the cyst is really a diverticulum from the ventricle, other defects being secondary.

IV.—CASE OF ROUND-CELL SARCOMA OF PALATE AND PHARYNX WITH METASTATIC TUMOURS IN THE VISCERA.

By DR. WALKER DOWNIE AND DR. A. R. FERGUSON.

The specimen which we bring before you to-night consists of the soft palate, fauces, pharynx, larynx, and gullet. The patient from whom those parts were removed was a man, 33 years old. He was first seen by Dr. Downie at the Throat and Nose Dispensary of the Western Infirmary on 26th February last, when he complained of sore throat, pain on deglutition, and huskiness of some three months' duration. On examination, the fauces were seen to be in a state of deep congestion, and the left faucial pillars and the greater part of the buccal pharynx ulcerated. The ulceration, though extensive, was superficial, and was considered to be a late secondary manifestation of syphilis. He was anæmic, emaciated, and feeble, conditions which favour the rapid extension of syphilitic lesions.

Chronic acid solution was applied to the raw surfaces, and mercury with iodide of potassium was prescribed. He improved very greatly up till the end of June, when, without any apparent cause, his cervical glands became enlarged, and he again experienced difficulty in swallowing.

On 17th September he was admitted to Ward XXV, under Dr. Downie's care. By that date he had become greatly emaciated. The local lesion had extended very considerably, both in area and in depth. Not only were the left faucial pillars and the buccal pharynx ulcerated, as when first seen, but the whole naso-pharyngeal cavity was raw, and from this the ulceration extended down to the opening of the gullet. At the lowest part of the pharynx the mucosa was undermined, and a pocket with gaping mouth was found on the left side, into which all food he attempted to swallow entered; and, to further complicate matters, the posterior wall of the larynx—the arytenoids and interarytenoid membrane—

was also ulcerated and greatly swollen. He was as a consequence quite unable to swallow any food (in attempting to swallow food it returned through his nose), and a bougie could not be passed into the gullet. It was therefore necessary to resort to rectal feeding, which was maintained till death. (The odour of the discharge secreted by and covering those raw surfaces was not only foul, but loathsome.)

On admission to hospital, his palate had been swollen and inflamed. A few days thereafter liquefaction occurred in the centre of a reddened swollen area to the right of the middle line in the soft palate. The small perforation which resulted steadily increased in size, and at death readily admitted the little finger.

On 20th September he was pale, cachectic, and exhausted, as much from septic absorption as from insufficient food. His pulse was rapid and feeble. In the afternoon he had two attacks of syncope, and early on the following morning he died.

On admission to hospital, the cervical glands on the right side formed a swelling considerably larger than a duck's egg, and this swelling slowly increased in size till four days prior to death, when it very rapidly shrank, and at death was scarcely perceptible.

The man was married. His wife had had no miscarriages, and he was the father of a healthy child of 7 months. Up till about twelve months ago he had enjoyed good health, with the exception of frequent attacks of sore throat, which from his description appear to have been of the nature of simple acute tonsillitis. He was an ironturner, of temperate habits, and he denied having contracted any form of venereal disease.

Dr. Downie considered the foregoing lesions to be due to late secondary syphilis. During the earlier course of the illness, the ulcers tended to heal under treatment; and in the later stages of the illness, the swelling of the palate, which ended in perforation, followed the usual course of a syphilitic infiltration of the palate.

The result of the *post-mortem* examination, during which multiple sarcomatous tumours were discovered, was wholly unlooked for. The swelling of the pharynx resembled inflammatory cedema, and was altogether unlike any sarcomatous lesion formerly seen by him in this region.

Sarcomatous growths met with in the pharynx usually spring from the basilar process of the occipital bone, and the ulceration is rarely of the type here encountered.

Dr. A. R. Ferguson described the conditions met with *post-mortem*, and the microscopical characters of the lesions observed. The following statement includes the *post-mortem* record and the microscopical characters of the tumours:—

“The body is slightly built, and markedly emaciated.

“*Buccal cavity and cervical organs.*—The posterior part of the soft palate, the faucial pillars, posterior wall of naso-pharynx, and the pharyngeal wall itself, in its entire circumference, are the seat of ulceration, the surface of which is of greenish colour and emits a highly offensive odour. The ulceration terminates somewhat abruptly opposite the upper border of the cricoid cartilage. The interior of the larynx is not involved in the process, though the margins, and more particularly the base of the epiglottis, are ulcerated. There is an almost circular perforation of the soft palate on the right side, measuring 7 mm. in diameter. The uvula is distinctly thickened and infiltrated, but is free from ulceration. The pharyngeal wall in section is seen to be much thickened (in places 1·5 cm.) by an infiltration with tumour tissue.

“The circumference of the pharynx at the level of ulceration is reduced, barely measuring half an inch.

“The cervical glands are moderately enlarged.

“The heart is markedly atrophied, but presents no lesion either of the muscle or valvular apparatus.

“There are no pleural adhesions.

“The lungs, in their middle and lower portions, are the seat of a septic broncho-pneumonia, the foci of consolidation being almost white in colour. These organs otherwise are œdematous and congested.

“The bronchial glands are enlarged and deeply pigmented, but no evidences of infiltration with tumour tissue can be obtained in them.

“Spleen is slightly enlarged; its pulp is irregularly congested; the Malpighian bodies are prominent, and whitish in colour.

“The liver contains near its anterior margin in vertical nipple line two soft white tumours (the larger 3·5 cm. in diameter) of spherical form; others, of smaller size but with similar characters, are discovered throughout the liver substance. The gall-bladder is distended with dark, greenish bile.

“The diaphragm is adherent over the convexity of the liver.

“Both kidneys contain several tumour-nodules with essentially the same characters as those above described in the liver.

These are mainly cortical in distribution, and are somewhat larger than a pea in general size. The kidney tissue otherwise presents evidences of catarrh. The suprarenals and ureters are normal.

"The stomach is very small, thin-walled, and irregularly contracted. The portion nearest the cardiac end is distended with gas, and its muscle is in a condition of extreme relaxation. The pyloric portion of the stomach is firmly contracted. There is no tumour of the stomach, the mucous membrane of which is in a condition of catarrh.

"The intestine is markedly contracted and almost devoid of solid contents, even the rectum being quite collapsed.

"It may be added that an indefinite flat cicatrix is found after careful scrutiny on the anterior aspect of the foreskin, just to the left side of the frenum. The penis presents no evidences otherwise of having been the seat of a primary syphilitic infection.

"*Microscopical examination.*—Sections prepared from the upper part of the pharyngeal growth show it to be exceedingly cellular, and comparatively richly supplied with small vessels. The cells are small, with either a single spherical or imperfectly lobulated nucleus, and relatively scanty protoplasm.

"The stroma is very sparse in amount, and consists of a fairly cellular connective tissue. Here and there are bands of connective tissue more distinctly fibrous in type.

"The growths in the kidney have essentially the same microscopical characters. At the margin, the cells of the tumour are observed to be extending between the uriniferous tubules, the epithelium of which shows signs of pressure and granular degeneration. Some hyaline casts are present in the compressed tubules at the periphery of the tumour-nodule. Those glomeruli which are surrounded by tumour-tissue are not involved.

"In the liver, the tumour presents some indications of an alveolar arrangement. There are more frequent evidences of cellular degeneration here than elsewhere.

"In all the situations examined, the essential features presented are those of the round-celled sarcoma."

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING I.—23RD. OCTOBER, 1901.

The President, DR. ROBERT JARDINE, in the Chair.

I.—FRESH SPECIMENS.

A. BY PROFESSOR MURDOCH CAMERON.

Professor Murdoch Cameron showed the fœtus removed by Cæsarean section from a case of pregnancy in the right horn of a double uterus. He also showed a drawing representing the condition noted from examination at time of operation. He said that he intended to read a paper on the subject at a future meeting.

B. BY DR. JOHN EDGAR.

Dr. Edgar read notes of following two cases, and showed the specimens removed by operation:—

1. *Case of carcinoma of uterus with pyometra: Vaginal hysterectomy: Recovery.*—Mrs. R., æt. 60, admitted to Samaritan Hospital on 11th October, 1901. Four children, youngest 19 years old. Menopause nineteen years ago. Profuse yellow discharge for last two years, brown and fœtid during the last few months. Pain in the lumbo-sacral region; cachexia. On examination, the corpus uteri was found to be enlarged and globular, the uterus movable, cervix not malignant, and the parametrium little, if at all, affected.

On 14th October cervix was dilated, and several ounces of fœtid pus escaped through the os uteri. With the flushing curette a piece of tissue, of the size of a hazel-nut, was removed, and kept for microscopic examination.

Dr. Galt's report.—"Sections show a fully developed epitheliomatous carcinoma, very cellular, and of apparently rapid growth."

On 19th October, Dr. Edgar, assisted by Dr. Russell, removed the uterus *per vaginam*. Clamps were used, and left *in situ* for forty-eight hours. At the beginning of the operation the sound was passed into the uterus. Though no force was

used, it perforated the fundus. The uterus was found after its removal to be infiltrated with cancerous growth throughout.

23rd October.—To-day the gauze packing was removed. There has been no sickness nor rise of temperature. Pain for the first twenty-four hours, not since.

2. *Case of extra-uterine pregnancy: Abdominal section: Recovery.*—Mrs. M'G., æt. 30, was admitted into the Samaritan Hospital on 5th October, 1901. Two children, youngest 8 years old. Five abortions, last two years ago. Menstruation regular; amenorrhœa between 30th June and 15th September—i.e., for eleven weeks. Morning sickness and breast symptoms. Two attacks of cramp-like abdominal pain, with distension, vomiting, and faintness. The first was on 30th August; the other, more severe, on 15th September. The latter was accompanied by slight uterine hæmorrhage, which became profuse on the following day, and continued till admission. Expulsion of decidua on 22nd September. Bearing-down feeling. Frequent micturition.

Examination.—Uterus pushed forwards by a large mass in Douglas' pouch, chiefly to the right. The mass is elastic, non-sensitive, and projects above the pelvic rim.

On 9th October, Dr. Edgar, assisted by Dr. Russell, performed abdominal section. While separating and bringing up the gestation sac, it broke in two. The smaller inner portion came away in the hand, and the fœtus dropped into Douglas' pouch. These were removed. The outer portion of the sac, composed partly of the right Fallopian tube and partly of partially organised blood-clot, was then brought up, and the pedicle clamped and cut through. The vessels were ligatured, and the cut surface stitched over with catgut.

The left appendages were healthy. A small cyst was enucleated from the free edge of the left mesosalpinx.

Patient made an excellent recovery, the temperature remaining normal throughout.

The fœtus measures $3\frac{1}{4}$ inches in length.

II.—CONSIDERATION OF SOME DETAILS IN THE OPERATION OF VAGINAL HYSTERECTOMY FOR CANCER.

By DR. W. L. REID.

For some years past I have been much interested in the subject of vaginal hysterectomy, partly because I think that,

carefully performed, it is an operation with a very low mortality, but principally because I believe, in spite of the opinion of many authorities of experience, that in well selected cases it holds out a very fair hope of permanent cure in an otherwise undoubtedly fatal disease.

In what I am going to say to-night I will limit my remarks to vaginal hysterectomy for malignant disease, and to the points on which difference of opinion may possibly exist; and I give details because I think that success or non-success as regards permanent results depends upon these details.

When I promised this communication I hoped to give the remote after-results, because this is, in the majority of cases, the real test of the value of any operative interference. But time has not permitted this to be done in such a fashion as would brave criticism. Suffice it to say, that of ten cases operated on for undoubted malignant disease, I know of one in which the disease reappeared and five in which, three, four, eight, eighteen, and twenty-five months after operation, there was no evidence whatever of its return. Of the other four I know nothing further than that they were well a month after operation.

First, then, as regards selection of suitable cases. Out of many who have presented themselves at the Western Infirmary, I undertook the radical operation, as I have already said, in only ten. As everyone knows, hardly one in fifty cases seen at a public hospital is not in an advanced stage and quite beyond hope of radical cure. I think no case should be operated on where the clinical signs are not clearly those of cancer. One is, of course, most willing to operate where the signs observed by the practitioner agree with the pathologist's report on pieces of tissue from the cervix or curettings from the interior of the uterus. Nevertheless, if the clinical evidence is decided, that is sufficient warrant for a hysterectomy. Again, no case should be reckoned suitable where the uterus is not movable perpendicularly to the extent of at least an inch. I have seen the statement made that the case is not suitable for operation unless the cervix can be pulled down to the vulvar orifice. This would exclude almost all nulliparous women, and seems to me absurd. Some would reject all cases of very narrow vagina, such as one finds in old nulliparous patients. I have operated, and would operate, on such, although I confess the difficulty is often very great indeed, and splitting of the perineum is usually necessary.

It goes without saying that when the disease has extended to the vaginal mucous membrane, or through the substance of

the uterus to the peritoneum, or has infiltrated the broad ligaments, operation is useless.

Given the decision to operate, what should be done in the way of preparation? The routine I have followed is this. When a patient appears with disease of the cervix of an apparently operable character, I remove the ulcerating surface with a sharp curette. If the disease is in the body of the uterus, the curette is used simply to remove a reliable sample of the abnormal tissue. Nothing further is done because of the risk of either perforating the organ or setting up a perimetritis which would complicate the anticipated hysterectomy. The patient is kept under the influence of 1 in 200 lysol douches night and morning until the pathologist's report is obtained. On the morning of the operation a 1 in 100 lysol douche is used, followed by a 1 in 200. After anæsthesia has been induced the vagina is again washed out, not with corrosive sublimate or carbolic acid, both of which constrict the mucous membrane, but again with 1 in 200 of lysol well rubbed into the surface. Where the interior of the uterus is affected the cervix is closed by a series of strong silk sutures, which are firmly tied and left long enough to be used for pulling down the uterus, and so leaving free the space which a vulsellum would otherwise occupy. If the cervix has been involved in the disease a circular cut is made in the vaginal mucous membrane, as far as possible from the diseased tissue. This is dissected up, folded over the stump of the cervix, and stitched with strong silk in the same way. The object of this is to close in the infective structures as completely as possible. The bladder is separated in the usual way, and Douglas' pouch opened. Now comes a question which seems debatable. Shall we divide the broad ligaments by clamping them or by ligatures? The former is a rapid method, the latter, if carefully done, is slow. I greatly prefer ligatures, on the ground that they can be put exactly where you wish them, while the clamp has to take such a grasp as it can. For other reasons I object to the clamp, but that is the chief. Again, I think five or six ligatures on each side are better than two or three. They hold better, and, taking in less tissue individually, can be more exactly placed, so keeping as far as possible from diseased structures. If they are aseptic, the number is no disadvantage, except for the time required to place them. As regards material, there is little to choose between good catgut and silk. I prefer the gut as being fully less apt to give after-trouble by not becoming thoroughly encapsuled. In my first operations I left the ligatures long, and allowed them to be

discharged for two or three, or sometimes even for six or seven, weeks after operation, and so kept the wound more or less open.

The Fallopian tubes are cut as far from the fundus uteri as possible, but unless the ovaries seem unhealthy they are not removed.

The wound is wiped out with iodoform gauze, and any bleeding point in the mucous membrane is ligatured. One piece of iodoform gauze is placed between the lips of the wound simply as a drain, and the vagina is loosely packed by another piece. These are usually not removed for from three to seven days, depending on the amount of fluid they have soaked up. Such patients are not allowed out of bed until about three weeks after the operation.

Let me now give you the barest outline of the progress of one or two cases so treated.

G. S., æt. 38, admitted on 11th September, 1899, with symptoms of malignant disease of the interior of the uterus. The curette was used, and a sarcoma diagnosed. This was confirmed by the pathologist, and on 20th September vaginal hysterectomy was performed with difficulty owing to narrowness of the vagina, the patient being nulliparous. The large size of the fundus increased the difficulty.

Patient was dismissed well on 17th October, 1899, and was last seen on the 4th of this month (October, 1901), when the scar was found quite sound.

M. W., æt. 52, admitted 8th February, 1900, her symptoms pointing to sarcoma of the uterus. Removal of a piece of tissue which presented at the cervix, and its examination by the pathologist, confirmed this diagnosis. On 28th February vaginal hysterectomy was performed, silk being used, as the gut was found defective. Patient dismissed well on 24th March. Seen on 4th of this month (October, 1901) with the scar quite sound.

I presume I have said a great deal with which you will all agree, but I can hardly think there will not be some difference of opinion as to the whole conduct of such cases, and it is by a declaration of these differences, and the reasons for them, that we may hope to help each other in practice.

Dr. Murdoch Cameron referred to *Dr. Leishman's* method of using the ecraseur for cancer of the cervix uteri, and the

good results he got, many cases remaining well years after operation. An easy case for operation is rarely got, and manipulation being mostly in the vagina made hysterectomy much more difficult than would appear from the diagrams in text-books. He had never injured the bladder in any of his operations. He had one case of vaginal hysterectomy, where, owing to severe hæmorrhage which could not be controlled from below, he had performed a rapid abdominal section, and secured the blood-vessels from above. He preferred to use clamps as a more rapid method than ligation.

Dr. Renton asked what the experience of operators now was in removing only the cervix, as he had two cases of no recurrence after ten years where the ecraseur was used. As regards choice of ligature or clamp in treating the broad ligament, it was very much a matter of which method you liked better. The clamp method is rapid and clean, while that by ligature is slow but equally good. He considered both methods equally good, but some cases were more suitable for the one than the other.

Dr. J. K. Kelly said he had for some time exclusively used clamps, although one objection to their use was the annoyance to the patient when they were removed. He had tried the angiotribe in two cases, but in the second the patient died from secondary hæmorrhage, and he had not tried it since. He agreed with *Dr. Reid* in the essential details of the operation as described in his paper, but a uterus might be removed even when its mobility was less than 1 inch. After using clamps a patient can be permitted to rise in twelve days. He had not met with sarcoma of the uterus amongst the many cases of malignant disease of that organ which he had seen.

Dr. Nigel Stark said that cases of cancer of the cervix recurred more readily than those where the disease existed in the body of the uterus. He considered that the main point was not the operation itself, but what results did we get after hysterectomy. In operating we must get well beyond the diseased area in cancer of the cervix, and for this purpose he considered ligatures even better than clamps, as we could see where we were going. He makes the first incision well down in vagina.

Dr. A. MacLennan said, with reference to the remark made by *Dr. Kelly* regarding the angiotribe, that *Doyen* had now discarded the instrument as a substitute for the ligature or clamps in vaginal hysterectomy, but that the angiotribe was applied to reduce the bulk of the tissues requiring ligature, thereby lessening the chance of slipping. To employ the

angiotribe instead of the ligature was dangerous, and a case was mentioned which had required abdominal section to ligate a uterine artery after having had the angiotribe applied to it for the regulation two minutes. Objection was taken to the application of mass ligature as well as to the use of clamps, as by those means the secretion from the cut surfaces was pent up; whereas if ligatures were applied to individual vessels, any cancerous cells in the neighbouring cellular tissue would be washed out by the effused lymph. Referring to Dr. Stark's remark that when the glands were involved the case was hopeless, the speaker said that a case had been reported by Landau, of Berlin, at the meeting of the British Medical Association in Edinburgh, where an abdominal section was performed for the removal of an infected gland from the pelvis after a previous vaginal hysterectomy. A single case like that made it therefore necessary that these cases should be treated from the more hopeful point of view.

Dr. W. L. Reid replied. He went back to the days of the ecraseur, but considered it a coarse method, and used the galvanic wire. The weak point in those days was the difficulty of diagnosis, and some of the successful cases reported were perhaps not malignant at all. He considered it impossible to use a clamp with the delicacy of ligature and scissors, and, curiously enough, the mortality was greater after the clamp than by the ligature method. None of his cases had died from the operation itself. He believed that wide amputation of the cervix might do in early cases, but all operators now performed total extirpation of the uterus.

III.—PURPURA HÆMORRHAGICA IN A CASE OF VOMITING OF PREGNANCY.

BY DR. ROBERT JARDINE.

Dr. Jardine's paper appears as an original article at p. 401.

Dr. Curstairs Douglas said he considered this a case of great interest, as it was noted by all obstetricians that hæmorrhagic purpura was a very rare complication of pregnancy. He had seen this case several times during life, and was satisfied it was a case of purpura and not of scurvy. The condition did not develop till after she had been some little time in hospital, where hygienic and dietetic conditions were opposed to scurvy; the coagulation time of the blood was notably diminished, and the urine contained urobilin, while *post-mortem* the kidneys and liver showed the evidences

of deposit of iron similar to that met with in pernicious anæmia. Müller had noted that very often the bleeding of labour was strikingly small in this disease. This was the case in Dr. Jardine's patient, and the same thing was observed in a very typical case reported by Byrne (*British Medical Journal*, 2nd November, 1867), where all the classical symptoms were present (nasal, buccal, cutaneous, and renal hæmorrhages). His patient had singularly little bleeding during delivery; but on the thirteenth day of puerperium, vaginal hæmorrhage set in, and the patient succumbed. One of the fullest papers on this subject was that by Wiener (*Arch. f. Gynæk.*, Bd. 31, 1887). In at least two of the cases which he quotes, however, there was grave uterine bleeding, and both patients died. Dr. Douglas congratulated Dr. Jardine on having had the opportunity of seeing this case, and of putting it on record.

Dr. J. K. Kelly considered these cases allied to vomiting of pregnancy, and that they have a connection with pregnancy. The cause was, however, unknown.

Professor Murdoch Cameron said he had met with no such case in his thirty-one years of practice.

REVIEWS.

Uterine Fibromyomata: Their Pathology, Diagnosis, and Treatment. By E. STANMORE BISHOP, F.R.C.S. Eng. With 49 Illustrations. London: Rebman, Limited. 1901.

THE literature on the subject of gynæcology is advancing by leaps and bounds on both sides of the Atlantic, not to speak of the Continent. In most cases the whole field is covered, but here we have the subject matter limited to fibroid diseases of the uterus—a very important subject, and one which is deserving of the fullest investigation and most careful treatment. After a short description and classification of these growths, Mr. Bishop gives a large number of cases not operated upon, with their authors, and which ended fatally. He then goes on to discuss the several changes which are caused directly, or indirectly, by them in a very full and lucid manner.

Mr. Bishop deserves great praise for the great pains he has

taken to ransack the literature of the past, and to focus the result in this book, which is one well deserving to be read by every surgeon and gynaecologist.

We are breaking away from the immediate past in a manner which is amazing; surgery, and especially abdominal surgery, is making very rapid strides in these days, and the teaching in this book is well up to date. The author has taken great pains to give the opinions of different surgeons; and while the book looks very much like a compilation of opinions, cases, and results, we are not left in doubt what his own views are. They are quite twentieth century views. There are still those among us who advise rest and medicinal treatment for a longer or shorter period, in many cases longer rather than shorter, only to find in the end, after the woman has become very anæmic, that operative interference is absolutely necessary to save her life. Now, while these remedies, together with electricity in suitable cases, have effected improvement, perhaps the bulk of cases will be found after a few years pretty much *in statu quo*.

Mr. Bishop is an advocate for early operation when the woman is physically in a good state to undergo such, and likely to make a good recovery. No doubt there are many cases seen which cause no symptoms almost at all. No one would think of at once advising their removal. But, whenever their presence gives rise to continued pain from pressure either on nerves or on any of the internal organs, it becomes a duty to consider the question of early removal of the tumour or tumours.

After a chapter devoted to anatomical considerations, the author takes up the question of symptomatology and diagnosis. He then devotes several pages to the development of uterine fibroids, indicating the changes which commonly take place in them. These are very fully stated. On the question of treatment by medicines, he is of opinion that "prolonged medical treatment of fibromyoma with a view to radical cure is useless," &c. He further says that, "if a tumour is obviously increasing in size, with or without increasing loss of blood, surgical or electrical treatment is called for." In "The *Rôle of Electricity*," Mr. Bishop holds, with most surgeons, that, except in certain cases attended with hæmorrhage, electricity is not of much use, and in many it is positively dangerous. In interstitial and submucous cases it frequently does good by arresting the hæmorrhage and causing a shrinkage of the tumour, and a return to fairly good health. In the following chapter the surgical treatment is fully and carefully reviewed,

the methods and experiences of various surgeons given, the conclusions come to being that the majority of these tumours require hysterectomy either by the vaginal or abdominal method.

A very good chapter is devoted to preparation for operation, which is followed by another giving the *technique* of the various operative methods. This chapter is a very clear and full account of the various operations by many different operators, and one which should prove helpful to many surgeons. Like others, the author advises that of vaginal hysterectomy as the operation of selection—*ceteris paribus*, with ligature of the broad ligament instead of the clamp. The combined operation, vaginal and abdominal, is that which seems to be most required, at least, in all severe cases, and is the favourite one of the author, the reasons for which are very cogent.

An excellent chapter is next devoted to post-operative treatment, followed by one on final results, which are well worth perusal, one of the most important items insisted upon being the proper suturing of the abdominal fascia after operation as the only way to prevent the occurrence of ventral hernia.

We desire to congratulate Mr. Bishop on his production of a work on such an important subject as uterine fibromyomata. He has given us a book which ought to be in the hands of every surgeon, and to the young and rising generation of special surgeons it will prove an invaluable help and guide to them. We need hardly add that the book is well printed and beautifully illustrated throughout.

A Text-Book of Gynecology. Edited by CHARLES A. L. REED, A.M., M.D. London: Henry Kimpton. 1901.

THE reader rises with very mixed feelings from the perusal of this text-book. This might, perhaps, be expected from a work in which an editor attempts to render "consecutive, systematic, and homogeneous" the contributions of many writers, whose natural endowments are as various as their scientific acquirements. There is, indeed, something attractive in the idea of constructing a great work on gynecology out of the materials contributed by the masters in that and allied departments of medical science. But this will only be done when some man of genius gathers those materials for himself, impresses on them the stamp of his own mind, and fuses them

into a unity by the heat of his own intelligence. The editor of this work adopts quite another and an altogether wrong method. He simply takes the papers of his contributors and turns the pronoun I into M'Murtry, or Herzog, or Cameron, or Millikin, each of whom can then quote his own opinions as if they were independent authorities. The *System of Gynæcology* of Allbutt and Playfair, which professes to be a system only in name, was in form much less objectionable than this text-book.

Although there are a few British contributors (J. W. Ballantyne, Murdoch Cameron, Mayo Robson, and W. J. Sinclair), the book is essentially American, and many of the writers exhibit the prolixity, the fondness for periphrasis, and the love of contrast which constitute in a great degree the peculiarities of American humour, but are out of place in a scientific treatise.

We would hardly find expressions such as the following in a British text-book:—"Warm countries where men and women are so soon ripe and so soon rotten" (p. 703). "The laxative power of fruit is a fiction from Paradise" (p. 717). "Popular ignorance which occasionally finds expression by an asinine physician" (p. 589). "It is not necessary to subject the patient to punchings, pommelings, and punctures" (p. 633). "Many young girls are so loaded with fæcal products that the breath has the odour of the night cart, . . . it is a filthy and degrading habit to go about loaded with some pounds of excrement" (p. 722). The essentials of a proctoscopy are "a patient, an assistant, and an operator having at least one finger on each hand" (p. 808).

The chapter on menstruation, and especially the pages discussing the menopause, are a forcible illustration of the unscientific, epigrammatic, and fanciful method of which we complain. We must, however, except from this blame the chapter by Dercum on "Pelvic Diseases and Nervous Affections," which is an essentially sane and moderate statement of a subject which, in the hands of some of the other contributors, would have lent itself to picturesque treatment.

The book attempts to cover the whole subject of gynæcology, and in doing so it invades to some extent, and quite justifiably, the closely related subject of obstetrics. We have, for example (p. 256), directions for saving the perineum during labour; (p. 331) a discussion of rupture of the uterus; (p. 376) a discussion of puerperal fever; and Murdoch Cameron (p. 460) contributes a chapter on "Cæsarean Section and its Modifications."

While the authors have naturally drawn chiefly from American sources, they are indebted for much of what is valuable from a scientific point of view to Veit's *Handbuch*, which forms as yet the high-water mark to which treatises on gynæcology have reached.

The work is too short to be exhaustive. One of the writers thus expresses himself in regard to his own subject:—"It is impossible here to go into a discussion of all the alleged causes, . . . since most of them really deserve detailed consideration." And it is this very want of "detailed consideration" which detracts from the value of the work. The writers are in too great a hurry. At the same time it is too long for a student's manual, not to speak of its other defects from a student's point of view.

To a British reader it is mainly interesting as an *exposé* of American methods of diagnosis and treatment, and it is chiefly for this, and not for an exhaustive discussion of pelvic disease, that it should be consulted.

Our Army in South Africa. By R. SCOTT SKIRVING. Sydney and Melbourne: Angus & Robertson. 1901.

THE author of this breezy *brochure* names "conceit" and "cocksureness" as the prominent and abiding qualities of the citizen soldier from the colonies, and it is plain that he has been sufficiently long associated with the colonial troops to have acquired those qualities in no small measure. He passes judgment so glibly on our generals, the conduct of the campaign, the officers of all ranks, the private soldier and on the medical department of the army, that one can only suppose him to have had a much wider knowledge and experience than anyone else serving in South Africa, or else to be a man of phenomenal insight and ability. To parody the well-known saying of a great man—"It is impossible for any reasonable being to be as cocksure about *anything* as Dr. Scott Skirving is about *everything*." Still, when due allowance is made for this "defect of his quality," we shall find much to admire and much to agree with in what he so clearly and forcibly puts before us. We fancy there are few who have taken part in the South African campaign who have not returned with the same opinion as our author as to the impossibility of putting off the war. "War," he says, "was in my humble opinion inevitable—the sooner the better, and the more

salutary. Let us thank God that Steyn simplified the settlement by dragging his burghers into the strife." Nor will such observers seriously challenge the following sentences, strong as they are:—"To me as a civilian, it seemed, from the hap-hazard, devil-may-care, go-as-you-please manner in which troops marched, dealt with the inhabitants, occupied and left towns, camped, scouted, received obsolete arms, and accepted the submission of lying burghers, that nothing was more probable than delay and occasional disaster. . . . My notion of war was of a condition where 'praying bands and burning towns' were the cruel-to-be-kind events by which hostilities were more quickly brought to an end. Instead of this, I discovered that we sent out proclamations here and apologies there, received ancient weapons, and gave passes to Ananias-like persons who took the oath of neutrality; we paid absurd sums of money to farmers' wives for food, while the husbands of these women (whose appearance, by the way, was a guarantee of their respectability) were sniping at us all day, and coming home to bed and food in these same farms at night."

While he has nothing but the highest praise for the non-commissioned officers, he has nothing but sneers and blame for all grades of commissioned officers. Herein he decidedly overshoots the mark, for while there undoubtedly were on active service many "kid-glove" officers whose services could well have been dispensed with, the great majority adapted themselves most admirably to the novel and trying conditions in which they found themselves, and displayed wisdom, intrepidity, caution, and capacity for acting on their own responsibility, especially creditable when it is remembered how little experience of actual warfare so many had before had. If our author has no better advice to offer than that "a lectureship on common-sense should be established at Sandhurst," we fear that his criticisms and suggestions will not be accepted as really trustworthy or valuable.

In regard to the medical department of the army, he speaks with more authority, because with more accurate knowledge, and it is satisfactory to find that he has no sympathy with the hysterical scream set agoing by Mr. Burdett-Coutts, and reinforced by the "noise of troublesome women, or of ill-informed, lady-like men, who were not gifted with great judgment." The stay-at-home critics of the medical arm of the service would do well to lay to heart the fact that "in the first place, it should always be kept in mind that war is necessarily a very terrible and cruel thing; even the polite,

apologetic warfare of that best of men, Lord Roberts, had at times to be cruel, at least to the sick Britisher." The Chief of Staff (Lord Kitchener) was not only acting strictly in accordance with the usages of war, but was doing what was more likely to shorten the war and thus save lives, when he gave orders that in the use of the railway, reinforcements, ammunition, artillery, and foodstuffs must take precedence of hospitals, medicines, medical comforts, and even of the sick and wounded.

There is much reason in Dr. Skirving's criticism of the "heavy, cumbersome, and rough" ambulances, and of the equipment of the field hospitals, as also in his suggestion that it was a mistake to deprive the medical arm of the service of its own special means of transport. Nor can we dissent from his suggestion that better provision might have been made for the boiling of the water consumed by men in camp. On the march the case was hopeless, for Tommy Atkins, in spite of all warning, would drink of any polluted stream or stagnant collection of fluid filth that he came across.

Notwithstanding all the defects and drawbacks he calls attention to, he is able to sum up the position in these words—"To the end of time, I take it that warfare must always entail unspeakable hardships on the sick, but, judging from my observation of this campaign, and from what I have read of others, it seems to me that the management of the South African war has shown a marked advance in this respect."

We owe something to Dr. Scott Skirving for his very outspoken little book, and we regard it as a valuable contribution towards the end he aspires to, namely, that we may learn from our mistakes, and that thus "the blood, the tears, and the treasure which we have so freely spent may not have been spent in vain."

A Treatise on Surgery by American Authors, for Students and Practitioners of Surgery and Medicine. Edited by ROSWELL PARK, A.M., M.D. Condensed Edition with Revisions. London: Henry Kimpton. 1901.

WHAT is known to our readers as the "American System of Surgery," edited by Professor Roswell Park, worthily stands in the very front rank of surgical works, both for its letterpress and illustrations. That work is published in two large volumes, and the present is a one-volumned edition of the same

book, which it is hoped may have even a wider circulation, from its more succinct descriptions and its more handy form. It has all the qualities of the larger work as regards paper, printing, fine illustration and beautiful binding, and although bearing marks of severe condensation, yet extends to 1,262 pages of letterpress, and is illustrated by 625 engravings in the text and 37 full-page plates in colours and monochrome. The largest part of the work falls on the shoulders of Professor Park, who not only takes the editorial supervision, but has contributed the whole section on surgical pathology, extending to 96 pages, and has also written fourteen other chapters. The other contributors are for the most part surgeons whose names are almost as familiar on this side of the Atlantic as in the United States, at least to the reading medical public. They are all specialists on the subjects they write about, and are thus justified in making their teaching succinct and dogmatic. A fairly successful attempt has been made to comprise within the limits of a single volume the essentials of surgery in all its departments, and we have chapters on the diseases of the eye, the nose and the ear, genito-urinary surgery, operative gynaecology, orthopaedic surgery, amputations, and skiagraphy. Of these, the last is the only one we can speak of as really incomplete, the three and a half pages devoted to it being absurdly inadequate for so important a subject.

We observe that Dr. Park speaks very favourably of the operation of lumbar puncture of the spinal subarachnoid space for the cure of hydrocephalus, but he does not mention the attempts made to establish a permanent communication between the lateral ventricles and the subdural space at the vertex. Dr. Dennis treats of the surgery of the chest, and in speaking of empyema, formulates the rule that a small amount of the fluid should be withdrawn by a hypodermic needle and examined bacteriologically, and that if in children it is found to contain pneumococcus only, or in adults bacillus tuberculosis only, thoracentesis alone is indicated. He might have shortened his rule by simply insisting on the importance in this connection of the presence of the staphylococcus and streptococcus pyogenes. He appears to be unfavourably impressed by the results of irrigation, and yet unwilling to commit himself to dispensing with it altogether. In this country, the trend of surgical opinion has been in recent years unfavourable to irrigation, and it is at least noteworthy that the mortality in operations for empyema has gradually declined as irrigation has been less frequently resorted to.

Most of the articles in this valuable book give much "food for

thought," and many of them might furnish a basis for interesting discussion did time and space permit. We can unreservedly commend them as exceedingly well done by men thoroughly conversant with what they were writing about.

As to the general get up of the book, we can only speak in the highest terms of praise; paper, printing, coloured plates, illustrations in the text, and binding, are all of the best, and one wonders how the book can be turned out at the exceedingly moderate price at which it is issued.

Diseases of the Stomach and their Surgical Treatment By
A. W. MAYO ROBSON, F.R.C.S., and B. G. A. MOYNIHAN,
M.S.Lond., F.R.C.S. London: Baillière, Tindall & Cox. 1901.

THOSE who recall the Hunterian lectures delivered by Mr. Mayo Robson at the Royal College of Surgeons in 1900, published in the weekly medical periodicals at the time, will warmly welcome this amplified and extended edition of them in the more permanent and accessible form of a book. To the substance of these lectures has been added the practice and experience gained since their delivery. Although the authorship is a dual one, it is manifestly a record of the work of the eminent Leeds surgeon, Mr. Mayo Robson, in the department of gastric surgery, to which he has so largely devoted his energies, and upon which he has, with such conspicuous success, thrown so much light.

One naturally turns to the work with the chief desire of learning something of Mr. Mayo Robson's methods, and in this the reader will not be disappointed; for, while the book is not—nor apparently does it lay any pretention to be—an exposition of British surgery upon the subject, it is the record of one who has earned every right, from his wide and varied experience, to propound his own views and practices to the exclusion of most others. The reader must not be surprised, therefore, to find but scant reference to the work of English surgeons, although he may feel a little puzzled to understand the wide and repeated recognition of work performed on the Continent.

By far the larger part of the book is taken up with the subject of gastric ulcer and its numerous complications. Mr. Mayo Robson's well-known work in this particular department of gastric surgery renders all he has to say of peculiar value and interest. Pathologists may question the opinion that the

two forms of gastric ulcer, clinically distinguished as acute and chronic, are merely stages or degrees in one pathological process; and also "that congenital hour-glass stomach is certainly rare, and not improbably mythical." But surgeons will cordially approve of such statements as the following:—"We feel it incumbent to urge most strongly that, although cases of gastric ulcer should first be submitted to medical treatment, yet if such treatment fails to cure in a reasonable time, or if relapses occur on the resumption of solid food, then medical aid should give place to surgical treatment, for it is unfair to the surgeon to hand over to him almost moribund cases, and it is unjust to the patients to persist in dosing them with medicine, or otherwise treating palliatively cases that can only be benefited or cured by surgical means." And, again, the following sound advice will appeal to all:—"If, therefore, medical treatment and rest properly carried out are not successful in arresting the bleeding [in the case of gastric ulcer] in a few hours, or if after being arrested the bleeding recurs, we should be driven to the conclusion that a large vessel is perforated; and, if a surgeon has not been previously asked to see the case, we would say emphatically that a surgical consultation ought to be held, with a view to considering the question of operation and immediate arrest of the bleeding by direct treatment, if the patient is in a fit condition to bear it."

Among practical suggestions worthy of note, the following may be instanced:—In the treatment of acute dilatation of the stomach, the authors "suggest that in every case where stomach lavage has failed, but only then (for the stomach-tube is the first indication, no matter at what stage it may be recognised, unless, indeed, the patient be actually dying), the abdomen should be opened and the stomach emptied and connected with the jejunum, thus providing for continuous drainage into the intestine. We believe that, as yet, this method has not been put to the test." Again, under the heading "Operation upon the Stomach," will be found the following advice with regard to the entire removal of carcinoma of the pylorus:—"It is, therefore, probable that permanently successful operations will depend upon a very wide local removal, especially of the upper border of the stomach. We are strongly inclined to believe that, even in the earliest examples of pyloric growth, a removal of at least half, possibly more, of the stomach is necessary."

Without any fear of detracting from the practical value of the work, which is sufficiently illustrated by the quotations given above, it is hardly possible to overlook the many

instances of what must be ascribed to overhaste in production. Throughout, the dual authorship shows itself in want of uniformity in regard to the references made to the work of one or other author. Thus the constant reiteration of "One of us—Mayo Robson," or "one of us—A. W. M. R.," is cumbersome, especially too when, with the fewest possible exceptions, the reference is to Mr. Mayo Robson's work, and in some cases his name is alone given. But the "I have operated" (p. 101) fails to indicate which author is alluded to. On page 199, the "abdomen" is stated as being found "dilated," when the context indicates it was the "stomach." On page 215, reference is made to "the accompanying drawing," but no such illustration is to be found. On page 292, two separate drawings are given illustrating two distinct methods of operating, but the title runs thus: "Fig. 64—Partial gastrectomy (Kocher's operation)."

These more or less purely literary blemishes, however, can be rectified in a second edition, which we trust the authors, as a reward for their good work, will soon have the pleasure of being called upon to issue.

Principles of Surgery. By N. SENN, M.D. Third Edition, Thoroughly Revised. Philadelphia: F. A. Davis Co. 1901.

ONE is struck by the inequalities in this book. Many parts of it—e.g., that on osteomyelitis—are good; others are quite the reverse. It may appear strange that to the latter category belongs one of the two new chapters, viz., that on "Degeneration." In this chapter are included atrophy, cloudy swelling, fatty and other changes in the tissues. The section on atrophy shows an absence of logical sequence; that on fatty changes is unintelligible (see p. 86); and hyaline is distinguished from colloid substance by possessing similar qualities (p. 87).

In many places the compilation is acknowledged by the frequent mention of authors' names, but there is, unfortunately, no bibliography.

It is not possible to note down all the points which one would like to draw attention to, but we may mention the occurrence on p. 4 of two figures with one description; to which of the two this refers, we do not know. Again, on p. 47, a ridiculous reference is made to Fig. 25 on the opposite page.

There is in many places evidence of haste, and an utterly

inadequate index terminates, but does not complete, the volume.

In spite of imperfections, the work has much to recommend it, and will, no doubt receive some of the "favourable consideration" which was "so freely showered upon the first two editions."

Surgical Applied Anatomy. By SIR FREDERICK TREVES, K.C.V.O., C.B., F.R.C.S. New Edition, Revised by the AUTHOR, assisted by ARTHUR KEITH, M.D. London: Cassells & Co., Limited. 1901.

THE new edition of this deservedly popular work is marked by many additions in the text. These additions are mostly in the form of anatomical facts, and their application to surgery. In this connection we would mention the plan of referring nerves to spinal "segments" (after Head); also, increased space has been devoted to the subject of the lymphatics of different regions. Where proper, recent work in embryology has been laid under contribution in such a way as to furnish the student with an intelligent idea of the subjects treated. Present-day surgical procedures have also been included.

Certain sections have, we think, with advantage been rewritten, *e.g.*, the surface relationships of the brain, the female mamma and its lymphatics, the nerves of the belly-wall, gastrectomy, &c.

We would point out that craniectomy is mentioned as being performed in microcephaly, but there is no word as to its results, beneficial or otherwise. On p. 36 the relationships of the angles of the parietal bone to the brain are given, but the surface relationships of the bone are omitted; on this page, also, "bregma" should be "lambda." The palatoglossus muscle (p. 129) is not usually described as receiving its nerve-supply from the hypoglossal. The common experience of the causation of rupture of the extensor tendons of the fingers differs from that given on p. 270. Two mistakes are reproduced from the last edition, *viz.*, "adducting" (p. 284, line 1), which should be "abducting;" and the misspelling of "tympanites" (p. 331).

There are 19 additional figures in this edition, some of which are more useful than ornamental.

With its minor imperfections, we can heartily recommend the volume, and we honestly believe that it will prove as useful to, and as popular with, its readers as the previous editions.

A System of Physiologic Therapeutics: A Practical Exposition of the Methods, other than Drug-giving, useful in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. I: Electrotherapy, by GEORGE W. JACOBY, M.D. In Two Books (Books I and II). London: Rebman, Limited. 1901.

It is scarcely necessary to allude in many words to this new system of therapeutics which is being provided for the medical profession by the indefatigable energy of Professor Solis Cohen and his publisher. The first instalment, or "volume"—really in two volumes or "books"—lies before us now. The first book is on electrophysics, and on the apparatus required for the therapeutic and diagnostic use of electricity; it is provided with 163 illustrations. The second book includes parts on electrophysiology and electropathology, on electrodiagnosis and electroprognosis, and on electrotherapeutics, general and special. There are also addenda on electrolysis, cataphoresis, and x-ray therapy, and on the uses of electricity in surgery, ophthalmology, rhinology, laryngology, otology, gynecology, and dermatology. This book is furnished with 57 illustrations. The wealth of detail and profuseness and excellence of illustration ought to render this a valuable work of reference.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B.A., M.D., LL.D. Third Edition, Revised and Enlarged. London: Henry Kimpton. 1901.

It is less than two years since we noticed at some length the second edition of this now standard work. We had occasion to very favourably review the book then, and the good opinion expressed at that time is well justified by the call upon the author to issue a third edition within so short a period as two years. There is little that calls for comment in addition to what was noted in an earlier review. Judging by the statement in the preface, the book portends to be something more than a re-edition. "The additions made in the present edition, notwithstanding the shortness of the interval, have been numerous and important. Prominent among them is that representing the advance in our knowledge of traumatic hæmatomyelia, and the light it has thrown upon the prognosis and treatment of injuries to the spinal cord, and the judgment it permits concerning the supposed efficacy of surgical

interference in such cases." Another new feature in the present edition, which will add very greatly to the instructive value of the book, is the introduction of a number of skiagrams. We have simply to repeat what we said on a former occasion:—"That not only is Dr. Stimson's book worthy to be placed alongside of Dr. Frank Hamilton's, but that it is destined largely to supersede it, as representing conclusions based on wider and more recent work."

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Two Cases of Mediastinal Tumour.—At a meeting of the Association for Internal Medicine in Berlin, held on 17th June, 1901, Mr. F. Klemperer showed two patients with tumours of the mediastinum. In both cases the tumour was visible and malignant.

One patient was a painter by occupation, a man of powerful physique, and 48 years of age. Ten years ago he had an attack of lead colic; since then he has been perfectly well until three weeks ago, when he began to suffer from hoarseness, for which he sought advice at the Polyclinic. Laryngoscopic examination revealed immobility of the left vocal cord, which remained in the cadaveric position, presumably from paralysis of the recurrent laryngeal nerve. There was also swelling of the supraclavicular glands on the left side, an arching forward of the chest wall on the same side, together with expansion posteriorly extending over the whole of the left half of the thorax. Percussion and auscultation were, with slight exceptions, normal. The various signs, taken together, pointed to the presence of a tumour connected with the ribs. Support was added to this by the finding of a tumour in the abdomen, of larger size than that just alluded to, and likewise situated on the left side. It was attached to the ilium on its ventral aspect. It was concluded that the tumours were probably of the nature of osteosarcomata, and that the abdominal growth was in all likelihood the primary one.

The second patient, who was of delicate build, complained of severe pain between the shoulder-blades. He was sent to the Polyclinic, it having been considered to be a case of aneurysm of the aorta. Examination there led to the diagnosis of mediastinal tumour. The growth was of large size, inasmuch as there was dulness over the whole of the anterior half of the thorax. Transillumination by means of the Röntgen rays confirmed the diagnosis. Slight pulsatile movements, different from those of aneurysm, were also observed. Nothing abnormal could be made out on auscultating over the tumour and over the heart. There was in this case, also, an arching forward of the chest-wall in the upper part of the thorax. There was no paralysis of the recurrent laryngeal nerve.—(*Deutsche Medizinische Zeitung*, 24th June, 1901.)

A Case of Marked Cyanosis Difficult to Explain—Dr. Sylvester F. M'Keen gives details of a case in the *Boston Medical and Surgical*

Journal, 20th June, 1901, the outstanding features of which are persistent blueness of the face, hands, and feet, associated with attacks of dyspnoea, and with vertigo and blurring of the vision. The author makes no comment further than that it presents a striking resemblance to two cases of "chronic cyanosis without discoverable cause" reported by Dr. Richard C. Cabot in the *Boston Medical and Surgical Journal* of 15th March, 1900.

From its unusual nature the case may be given somewhat in detail. The patient is a man, aged 53, and a German by birth; he follows the occupation of packer in an iron-foundry. His family history is excellent. As regards his personal history, he was quite well until twenty years ago, when he had an attack of dyspnoea which laid him up for eight days. It came on suddenly, and was unaccompanied by any other symptoms such as cyanosis, oedema, or palpitation. Similar attacks occurred at intervals, varying from six months to two years. There is no history of venereal disease. He drinks, on an average, one glass of whisky and four glasses of beer daily, and smokes and chews to a moderate degree.

His present illness began a year and a half ago with blueness of the face and hands. It came on suddenly while he was recovering from an attack of dyspnoea, and has persisted, with frequent exacerbations, ever since. The cyanosis, likewise, often increases suddenly, his face and hands becoming quite blue, without his suffering from dyspnoea or discomfort of any kind; it does not seem to be increased particularly by exertion, nor does exertion cause any dyspnoea. Increased blueness of the extremities is seldom accompanied by dyspnoea, although when he has one of his attacks of shortness of breath he is always more cyanotic than usual. About every two or three days he has attacks of blurring of the vision, followed by sweating and vertigo, when everything in the room seems to go round, and he is obliged to seize hold of some object for support and to prevent his falling. He does not suffer from headaches nor noises in the ears. When very blue, his hands feel cold and numb. For about two years he has been subject to frequent attacks of diarrhoea, sometimes to the extent of causing prolapsus recti. Once there was blood in the stool. He sleeps well, but has to get up once during the night to pass urine. His appetite is good.

Physical examination.—Patient is well developed, but rather thin. He is mentally active. There is no dyspnoea. Extreme cyanosis of the face, especially of the lips, tip of nose, and ears, is noted; the small veins and capillaries of the skin are observed to be dilated. The hands and feet are also very blue; this is more marked when they are in a dependent position. The circulation is very slow in the skin of other parts of the body. An erythematous rash is present on the shoulders and front of the chest. There is slight clubbing of the fingers, and slight pitting on pressure over the tibiae.

Heart.—The area of dullness is normal; the apex-beat is felt in the fifth intercostal space within the nipple line; the rhythm is, for the most part, regular; there is no murmur, and the second aortic sound is not accentuated. The pulse-rate is 65; there is occasionally slight irregularity; the tension is not high; the walls of the arteries are slightly thickened and roughened.

Blood.—Taken from the ear, finger, and toe, counts gave 9,440,000, 9,840,000, and 9,380,000 red corpuscles respectively. The white corpuscles numbered 9,000, of which the polynuclear formed 74 per cent, the small mononuclear 18 per cent, the large mononuclear 6 per cent, and eosinophiles 2 per cent. The hæmoglobin amounted to 120 per cent plus.

Lungs.—The percussion-note is somewhat hyper-resonant over the upper part of the chest-wall in front; there are no râles. There is no dullness beneath the sternum. The respirations number 18.

Careful examination with the fluoroscope is stated to have shown only emphysema, with consequent enlargement of the right heart, diminished excursion of the diaphragm and depression of the liver; no mediastinal tumour or aneurysm was made out.

Liver.—The upper border of dullness begins at the seventh rib, in the

mammary line, and extends to two fingerbreadths below the costal margin; its edge is not palpable.

Spleen.—The upper border of dullness is at the eighth intercostal space in the mid-axillary line; the edge can be plainly felt an inch below the costal margin, descending to two and a half inches on deep inspiration.

Mouth.—The tongue is deeply cyanotic; the gums are swollen, and bleed readily; and many of the teeth are loose and decayed. The mucous membrane of the cheeks and pharynx is purplish in colour.

Larynx.—General congestion is observed, but no obstruction.

Eyes.—The conjunctivæ are injected; the pupils are equal, and react. The retinal veins of the fundi are engorged, and are very dark in colour; otherwise the fundi are normal.

Urine.—The amount passed in twenty-four hours is 70 oz. It is normal in colour and reaction. The specific gravity is 1015. It contains a trace of albumen. Sugar is absent. The amount of urea is 35 grammes. The sediment contains a few granular casts, renal cells, leucocytes, and abnormal blood corpuscles.

The reflexes are normal, and so is sensation.

On the Frequency of the Presence of Sugar in the Urine in Corpulent Persons.—In a paper by Dr. Felix Wolfner, which appeared in the *Berlin. Klin. Wochenschr.*, April, 1901, the writer submits the statement made by various authors, viz., that in corpulent individuals the appearance of sugar in the urine is frequently met with to examination. The result arrived at was as follows:—Of 966 persons under observation, in 331 the corpulency was of a lesser, and in 635 of a greater degree. Of the 331 individuals with embonpoint, 25—i.e., 75 per 1,000—had sugar in the morning specimen of the urine. Of these 331, 206 were women, and 125 men. In the former it was detected 10 times—that is, 48.5 per 1,000—and in the latter, 15 times—that is, 120 per 1,000. In the 635 cases of greater corpulency, sugar was present 71 times in the urine obtained in the morning—that is, in 110 per 1,000; in the 268 women, 18 times—that is, 66.1 per 1,000—and in the 367 men, 53 times—that is, 144.1 per 1,000. It was therefore found that in both degrees of corpulency sugar in the urine was almost twice as frequent in men as in women. It is also noteworthy that in the lesser form of obesity the presence of sugar in the urine is represented by 75 per 1,000, while in the more pronounced form it is represented by 110 per 1,000. These conclusions serve to confirm the view commonly held regarding the frequency of sugar in the urine in obese persons.

Moreover, the author made investigations with a view to determine the influence of race on the frequency of the presence of sugar in the urine in the obese. His conclusions are not in accordance with the statements of other authors, that sugar is more frequently found in the case of Jews than in those who are not Jews. The following are the data which he adduces in support of his position:—Of 966 corpulent persons, 409 were Jews and 375 nonsemitic; the remaining 182, for want of proper information, could not be classified. Out of 375 corpulent persons not of semitic extraction, 38—that is, 101 in 1,000—had sugar in the urine obtained in the morning, while out of 409 persons of similar habit of body and of semitic origin, 92—that is, 92 in 1,000—had sugar in the morning specimen of the urine.

It cannot be said whether the fact of the parents of the corpulent individuals being obese or the reverse has anything to do with the frequency of the glycosuria.—(*Deutsche Medizinisch-Zeitung*, 14th March, 1901.)

A Case of Measles Complicated by Appendicitis.—Under the above heading, a case is reported by Dr. Harold Williams in the *Boston Medical and Surgical Journal*, 27th June, 1901. It formed the subject of a paper read before the American Pediatric Association, Niagara Falls, on 29th May, 1901.

Its main features are these:—A boy of 12 who had never been strong,

fell ill on 31st March of the present year. He had frequently suffered from gastro-intestinal disturbance, and had had measles some years previously. His present illness began with nausea and general malaise; there was slight pyrexia, the temperature being 100° F. On the third day he complained of sore throat, and vomited once; his temperature was 102° F. On the fourth day he vomited more than once, and began to cough; he also complained of abdominal pain; his temperature was 103·4° F. The conjunctivæ were slightly injected. There was striking congestion over the alveolar processes, together with a congested appearance of the posterior pharynx. There was also catarrhal inflammation of the right tonsil, and the uvula was adherent to it. Koplik's sign was not present. Careful examination of the abdomen revealed no localised tenderness. On the fifth day the eruption of measles was seen on the face and behind the ears. It was confluent. The conjunctivitis was more marked, and the abdominal condition unchanged. The temperature was 104° F. On the sixth day the eruption was distributed over the neck and trunk. The temperature was 104·4° F. In the early morning the patient complained of pain in the right side; it increased steadily in severity, and could be definitely referred to a point an inch above Poupart's ligament; it was increased on the slightest pressure. The patient pointed to the spot with one finger. There was no dulness or induration. The diagnosis of appendicitis was made, and it was decided to operate without delay. This was done, and the patient made a very satisfactory recovery.

The appendix was found to be moderately swollen over the middle two-thirds of its length, at which part the lumen was occupied by a faecal concretion the size of a small bean. Above this level the mucous coat was swollen, and the lumen partly filled with creamy, tenacious, purulent material. Round the concretion the mucosa was dark red to green in colour. Below it, again, it was thickened, and there was some muco-purulent secretion.

The case is of interest medically, on account of the rare occurrence of the two diseases in combination.

Basedow's Disease with Symptoms of Myxœdema.—A case in which the one disease appeared to merge into the other is related by J. A. Hirshl in the *Weiner Klin. Wochenschr.*, 13 Jahrg., Nr. 27.

The patient developed Basedow's disease in a typical form after enteric fever and resulting impairment to the mental faculties. At the end of two months, the palpitation of the heart disappeared. An affection of the skin of the face and lower extremities supervened. It was attended by forgetfulness, and by atrophy of the uterus. The goitrous enlargement was to be felt at this time as a swollen fibrous body. Alimentary glycosuria was for the most part absent. The writer explains the occurrence of the two diseases simultaneously in this way: That the changes in the nervous system—due to hypersecretion and parasecretion of the thyroid gland, and along with them the series of symptoms of Basedow's disease to which they correspond—may even outlast the period at which hypertrophy of the thyroid gland gives place to atrophy of that organ.—(Eisenmenger, *Centralblatt f. d. Grenzgebiete der Medizin und Chirurgie*, 18th July, 1901.)

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

Fibroid Tumours of the Uterus in Pregnancy and Labour.

—An interesting addition to the literature of this subject is made by Dr. F. W. Kidd, under the title "Notes on a Successful Application of the Forceps where Cæsarean Section had been previously performed" (*Dublin Jour. Med. Science*, October, 1901).

The patient, a woman of 32 years of age, was first admitted to the Coombe Hospital in December, 1898. On examination, it was found that the cervix was soft, especially its anterior portion; os patulous, admitting two fingers, displaced forwards, close to pubes. The posterior wall convex, caused by a hard growth growing from the body of the cervix. This also caused an enlargement posteriorly, extending towards the promontory of the sacrum; it was regular in outline and palpably a fibroid growth, seemingly about the size of a goose egg. The head of the child lay on the left pubic ramus. As the tumour sprang from the cervix itself, all attempts to push it above the brim of the pelvis failed. The Cæsarean section was preferred to enucleation of the tumour. When the uterus was opened, the placenta was found to be *prævia Cæsareana*. The child weighed nearly 8 lb., and, as is so common in children delivered in this way, did not breathe spontaneously. Artificial respiration by Schultz's method soon brought it round, but, unfortunately, the child had convulsions, and, after vomiting blood, died on the third day. The rupture of small vessels in œsophagus and stomach is doubtfully ascribed to the method of artificial respiration used. At the operation, the tumour was felt filling up the brim of the pelvis posteriorly. Panhysterectomy, it was decided, was the only operative measure feasible then, but, in the patient's weak condition, it was thought better to leave the tumour to be dealt with later. In writing the report of the operation, Dr. Kidd noted with regret that he had not adopted Dr. Murdoch Cameron's method of tying the Fallopian tubes to sterilise the woman. The woman made a good recovery, and, before dismissal, was examined under chloroform to determine what measures should be taken subsequently for the removal of the tumour. By the involution of the uterus the tumour had come down and now filled the hollow of the sacrum, and was so near the examining finger that the simplest method of attack seemed to be through the posterior *fornix*. Dr. Smyly, who saw the case, was, however, of opinion that the uterus had formed adhesions to the anterior abdominal wall, and that in consequence the uterus could not be drawn down sufficiently to allow of such control of hæmorrhage as might be required. The patient received the usual warning, and adopted the usual course of disregarding it. She returned to the hospital in September, 1900, after having been fully three days in labour. The membranes were found ruptured, and the patient seemed to be in the second stage of labour, but the tumour prevented the descent of the head. The posterior wall of the uterus was drawn up as high as it could go; nevertheless, the tumour did not seem to afford so great an obstacle as on the previous occasion, so the forceps was applied to the head, which lay in the left occipito-anterior position, and after some considerable amount of traction, the patient was delivered of an 8½ lb. female living child. The placenta was removed with difficulty on account of adhesion on the anterior surface. Mother and child made a good recovery.

To this subject Dr. Alban Doran contributes a case of fibroid pregnant uterus removed at the fifth month (*Lancet*, 2nd March, 1901, p. 621; also *Trans. Obst. Soc., London*, 1901, vol. xliii, p. 178, with illustration). This was a fibroid growth blocking the pelvis, and, in addition, there was a large fibroid on the fundus of the uterus. The position of the lower growth would have completely occluded labour, and would have prevented enucleation of the tumour.

DR. ARCHIBALD DONALD read a paper on this subject before the London Obstetrical Society in June (*Trans. Obst. Soc., London*, 1901, vol. xlviii, p. 180). The writer comes to the conclusion that in the majority of instances neither pregnancy nor labour is seriously influenced by these tumours, but that in a small proportion of cases the danger to mother and child is greatly increased. Thus, during pregnancy, the risks are (1) distress from rapid growth of tumour; (2) incarceration of tumour in pelvis; (3) serious pressure on bladder; (4) degeneration of tumour; (5) excessive rotation of the pregnant uterus; (6) abortion or premature labour. *Abortion or labour may be com-*

plicated by (1) obstruction of the natural passages; (2) malpresentations; (3) retention of placenta and membranes; (4) extension of the tumour during labour, and inversion of the uterus. During the puerperium, septic infection is more likely.

As regards treatment, Dr. Donald says that in the great majority of cases it is best to leave matters alone till term. Cæsarean section is preferable in cases where delivery by the natural passages involves the employment of much force.

Dr. Donald gives various illustrative cases from his own experience. In one he performed Cæsarean section before term on account of the rapid deterioration of the patient; hysterectomy was successfully performed immediately after the child was removed.

In three cases he performed hysterectomy in the early months of pregnancy, on account of the rapid growth of the tumours.

He entirely condemns induction of premature labour or abortion, on account of the difficulty of removing the placenta, &c. An illustration is given from a case where spontaneous abortion occurred, followed by septic infection.

Dr. Donald advocates a preliminary myomectomy wherever it is possible, as by this means the life of the child may be saved. In all cases of sub-peritoneal fibroids, if pedunculated, the tumour ought to be removed during pregnancy. When the tumour is more sessile, and the operation is required in the earlier months, it is best to enucleate the tumour and stitch up the gap in the uterine wall. If, however, the raw surface is too extensive, or if it is too close to the uterine cavity, or if hæmorrhage is difficult to control, the operation ought to be treated by hysterectomy. In one of the cases the wound in the uterus is described as "about the size of a saucer;" this was sewn up in several layers.

A discussion followed, in which Dr. William Duncan disagreed on several points; sub-peritoneal fibroids should be severely left alone where pedunculated, unless one were impacted in the pelvis. He had one case of spontaneous rupture, during pregnancy, of a fibroid uterus.

Dr. Herman did not think fibroids caused abortion. Kelly's statistics gave 20 per cent, but this was the ordinary percentage throughout the general population.

Dr. Briggs maintained that radical abdominal operations during gestation, even if always successful, must not replace vaginal enucleation of sub-mucous fibroids after artificial or spontaneous termination of the pregnancy.

Dr. Bland Sutton warned operators against accepting the patient's story that the tumour was growing rapidly. This often was merely the advance of the pregnancy. He mentioned a case in which he had enucleated a fibroid at the fourth month of pregnancy, and a careful examination of the uterus failed to detect any more tumours. The patient was safely delivered at term, but the fœtus had an imperforate œsophagus, and the uterus was then tuberosed with fibroids. It was quite certain that abdominal enucleation of fibroids, whether from the gravid or unimpregnated uterus, could only be hopefully undertaken in a very small proportion of cases, because there was the great liability of other seedling fibroids to assume activity and grow into very formidable tumours.

Dr. Lewers had had several cases of fibroids in pregnancy, not complicating the course of events. He thought operation only exceptionally required.

Dr. Herbert Spencer agreed in condemning induction of abortion. He had seen many fibroids in pregnancy, but only one requiring Cæsarean section. In several cases it was expected the tumour would obstruct the passages, but it was drawn up during labour and gave no trouble.

Dr. Butler Smythe protested against indiscriminate operation.

Dr. Peter Horrocks, the President, thought that fibroids caused repeated miscarriages. He thought that modern methods had to a large extent eliminated the risk of sepsis after miscarriage, but not the risk of hæmorrhage from retained placenta. It was often impossible, from the length and tortuosity of the canal, to peel off an adherent placenta. Pushing up a tumour

from the pelvis during labour might be dangerous, and he did not advocate that great force should be used.

In this discussion there is one risk not mentioned, namely, hæmorrhage after the labour, apart from the question of retained placenta. In this connection, we may quote from Dr. Macan's report of the Rotunda Hospital (*Dublin Jour. Med. Science*, 1834). Of six deaths occurring during the year, three were of women who had fibroids; one of these died of post-partum hæmorrhage in spite of injections of perchloride of iron. *Post-mortem*, the uterus was found studded over with fibroid tumours of various sizes. In another case a fibroid on the fundus, weighing 6½ lb., was found gangrenous, and adherent to abdominal walls and to intestines. The fundus uteri was ulcerated through, and giving passage to fœtid debris of tumour. To this report is added the somewhat Irish note—"If this case were to come before me again, I would certainly recommend Porro's operation."

Suppurating Fibroid Tumour of the Uterus (*Trans. Obst. Soc., London*, June, 1901).—Dr. Stanley Boyd describes a case of abdominal tumour, shown by aspiration of fluid to contain pus. It was diagnosed as ovarian cyst. Twenty-four pints of offensive pus were removed by an abdominal incision, and a drain was inserted, as the patient was too weak to admit of removal of the tumour, which was extensively adherent. Next morning three more pints of pus had escaped, and two more the following day. A fortnight later the abdomen was opened, and the tumour found to be fibroid, or rather the shell of what had been a fibroid. The uterus and broad ligaments contained other fibroids, one of them sloughing. The uterus was accordingly removed.

We have received some pamphlets by Dr. Mary Dixon Jones, reprinted from *Annals of Gynecology and Pediatrics* (xiv, 1901), *St. Louis Med. Review* (February, 1901), and *Medical Record* (September, 1901). In these she maintains that fibroids are the result of uterine sepsis, and suggests that a timely curetting might prevent their occurrence. She is a strong advocate for the early removal of all fibroids.

DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B., C.M., F.R.S.E.

Tubercle of the Larynx.—This subject has received a considerable amount of attention during the past year, and a discussion upon it took place at the annual meeting of the British Medical Association. Dr. St. Clair Thomson this year read a paper before the British Congress on Tuberculosis. He deems the present moment opportune for briefly reviewing the principles which may guide us in the treatment of this affection. While, no doubt, a certain number of apparently permanent cures have been effected, he is inclined to think that the supporters of surgical treatment locally would be inclined to admit that the majority of cases are unsuitable for operative measures. He also thinks that the treatment of the last decade has rested too much upon the bacillus as the one and only cause, and that sufficient attention has not been paid to general considerations.

In looking elsewhere than to surgical measures, he strongly recommends the making of an early diagnosis on the same lines as have been so favourably advanced in recent years on the subject of pulmonary mischief. After a diagnosis is made the same methods should be employed as are now adopted in pulmonary phthisis. He is careful to point out, however, that local treatment, where it is likely to be effective, should be by no means neglected.

Dr. McCall, of Bournemouth, records a good result, in an advanced case of

tubercle of the larynx, from insufflations of resorcin mixed with orthoforme, varying in different proportions from one-third to two-thirds, and blown in every alternate day.

Diphtheria.—Dr. W. Jobson Horne points out, in a paper to the *Journal of Laryngology* for June, that he drew attention three years ago to the frequency with which he found tubercular bacilli in the recesses of the ventricles which to the naked eye presented normal appearances. The specimens had been removed from subjects who died of pulmonary tuberculosis. Following up this line of investigation, he finds that the same ventricles may at times form harbours for diphtheric bacilli, and that fatal cases of so-called membranous laryngitis owing to the organisms not having met with have been regarded as non-diphtheric, may really be cases of diphtheria.

Recurrent Papillomata.—Dr. Bronner, of Bradford, records a case of recurrent papillomata of the larynx, which has been under his care since the year 1896. The patient was 45 years of age, and had suffered for two years previous to the first consultation. He had had one severe attack of laryngeal spasms, which nearly proved fatal. A spray of formalin (1 in 1,000, increasing up to 1 in 100) was ordered. In March, 1899, a few growths were removed, but were much smaller than the previous ones. Since then there has been no recurrence of the tumour.

Dr. Haring recommends phenol-solfo-recinate as a useful adjunct to endo-laryngeal manipulation.

Books, Pamphlets, &c., Received.

- The Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine, by William Osler, M.D. Fourth Edition. Edinburgh: Young J. Pentland. 1901.
- Handbook of Public Health, by John Orr, M.D., F.R.C.P.E., M.R.C.S. Eng. Illustrated. Edinburgh: E. & S. Livingstone. 1902. (4s. net.)
- The Principles of Hygiene, A Practical Manual for Students, Physicians, and Health Officers, by D. H. Bergey, A.M., M.D. Illustrated. London: W. B. Saunders & Co. 1901. (13s. net.)
- The Accessory Sinuses of the Nose, Their Surgical Anatomy, and the Diagnosis and Treatment of their Inflammatory Infections, by A. Logan Turner, M.D. Ed., F.R.C.S. Ed. With 40 Plates and 81 Figures. Edinburgh: William Green & Son. 1901. (12s. net.)
- Impressions of a Doctor in Karki, by Francis E. Fremantle, M.A., M.B., B.Ch. Oxon., M.R.C.P. London: John Murray. 1901. (10s. 6d. net.)
- Transactions of the Edinburgh Obstetrical Society. Vol. XXVI. Session 1900-1901. Edinburgh: Oliver & Boyd. 1901.
- Manual of the Diseases of Children, by John Madison Taylor, A.M., M.D., and William H. Wells, M.D. Second Edition, thoroughly Revised and Enlarged. Illustrated. London: Henry Kimpton. 1901. (21s. net.)

- Text-Book of Pharmacology and Therapeutics**, Edited by W. Hale White, M.D., F.R.C.P. Edinburgh: Young J. Pentland. 1901.
- Kimpton's Pocket Formulary for 1901**, by E. Quin Thornton, M.D. Third Edition, Revised and Enlarged. London: Henry Kimpton. 1901.
- The Care and Feeding of Children**, A Catechism for the Use of Mothers and Children's Nurses, by L. Emmett Holt, M.D. Second Edition, Revised and Enlarged. London: Henry Kimpton. 1901.
- Clinical Pathology of the Blood**, A Treatise on the General Principles and Special Application of Hematology, by James Ewing, A.M., M.D. Illustrated with 30 Engravings, and 14 Coloured Plates drawn by the Author. London: Henry Kimpton. 1901. (18s. net.)
- Diseases of the Intestines**, by Dr. I. Boas; Translated from the First German Edition by Seymour Basch, M.D. With 47 Illustrations. London: Henry Kimpton. 1901. (21s. net.)
- The Diagnostics of Internal Medicine**, by Glentworth Reeve Butler, A.M., M.D. With 5 Coloured Plates, and 246 Illustrations and Charts in the Text. London: Henry Kimpton. 1901. (25s. net.)
- Introduction to the Differential Diagnosis of the Separate Forms of Gallstone Disease**, by Professor Hans Kehr; Authorized Translation by William Wotkyns Seymour, A.B., M.D. With an Introduction by Professor Kehr. London: Henry Kimpton. 1901. (9s. net.)
- Diseases of the Nose and Throat**, by J. Price-Brown, M.B., L.R.C.P. Illustrated by 159 Engravings. London: Henry Kimpton. 1901. (16s. net.)
- A Text-Book of Practical Obstetrics**, by Egbert H. Grandin, M.D., with the Collaboration of George W. Jarman, M.D. Third Edition, Revised and Enlarged. Illustrated with 52 Full-page Photographic Plates, and 105 Illustrations in the Text. London: Henry Kimpton. 1901. (18s. net.)
- Studies in Heterogenesis**, by H. Charlton Bastian, M.A., M.D., F.R.S. First Part. With 210 Illustrations from Photomicrographs. London: Williams & Norgate. 1901. (7s. 6d.)
- The Practical Nursing of Infants and Children**, by Frank Cole Madden, M.B., B.S. Melb., F.R.C.S. London: Cassell & Co., Limited. 1901.
- On the Cure of the Morphia Habit without Suffering**, with a Note on the Physiological Method of Relieving the Craving for Drink, by Oscar Jennings, M.D. Paris, M.R.C.S. Eng. Second Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1901. (3s. 6d. net.)
- Menstruation and Its Disorders** (Medical Monograph Series, No. 3), by Arthur E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P. London: Baillière, Tindall & Cox. 1901. (2s. 6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 23RD NOVEMBER, 1901.**

	WEEK ENDING				
	Oct. 26.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.
Mean temperature, . . .	45·5°	49·4°	45·9°	39·5°	41·9°
Mean range of temperature between day and night, . .	14·5°	12·3°	12·1°	12·8°	10·9°
Number of days on which rain fell, ...	6	3	1	4	5
Amount of rainfall, . . ins.	0·52	0·42	0·17	1·07	1·74
Deaths registered, ...	294	316	356	318	327
Death-rates, ...	20·0	21·5	24·2	21·6	22·2
Zymotic death-rates, . . .	2·9	3·2	4·1	3·5	3·6
Pulmonary death-rates, . .	6·5	6·0	7·8	8·2	8·3
DEATHS—					
Under 1 year, ...	73	80	93	61	67
60 years and upwards, . .	50	57	53	74	65
DEATHS FROM—					
Plague, ...	...	1	...	...	...
Small-pox, ...	...	...	...	...	...
Measles, ...	10	13	19	18	24
Scarlet fever, ...	1	4	2	5	4
Diphtheria, ...	1	4	5	5	...
Whooping-cough, ...	6	2	12	3	5
Fever, ...	11	9	12	8	5
Diarrhœa, ...	12	15	10	13	14
Croup and laryngitis, . .	...	2	1	2	1
Bronchitis, pneumonia, and pleurisy, ...	64	75	89	91	90
CASES REPORTED—					
Plague, ...	3	2	...	...	...
Small-pox, ...	...	...	1	..	1
Diphtheria and membranous croup, ...	8	17	23	15	16
Erysipelas, ...	28	38	33	72	34
Scarlet fever, ...	98	71	89	72	78
Typhus fever, ...	1	...	...	...	2
Enteric fever, ...	82	85	47	31	34
Continued fever, ...	...	...	...	1	1
Puerperal fever, ...	1	...	...	2	4
Measles,*	252	390	414	554	467

* Measles is not notifiable.

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